Checking Facts by a Bot

Crowdsourced Facts and Intergenerational Care in Posttruth Taiwan

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From the discussion of "posttruth" in 2016 to the "infodemic" in 2020, online rumors seem to have become more rampant, harmful, and harder to be debunked. This article examines Cofacts, a Taiwan-based fact-checking service that combines a chatbot and a database of fact-checked responses provided by volunteers to help debunk rumors circulated on the messaging app LINE. I argue that Cofacts's crowdsourcing approach joins what Donna Haraway calls embodied objectivity that insists on "the particularity and embodiment of all vision" to challenge the conventional fact-checking practice that presumes singularity, disembodied objectivity, and authority. Underpinning Cofacts's fight against online rumors is the intergenerational conflicts that are ingrained in different life experiences, beliefs and values, and expectations of what a good life is. By taking up a technological solution that emphasizes openness, Cofacts opens a space for digital natives to contest what fact is and claim the power of speaking from their parents and the patriarchal society on the one hand and to forge new connections of care and reinitiate conversations that have been barred by the invisible walls of chat rooms and the widening gap of values and beliefs between generations on the other hand.

"Fake news killed a diplomat!" said one news headline. On September 14, 2018, just two months before Taiwan's midterm elections were to take place, diplomat Su Chii-cherng took his own life in his Osaka residence following criticism he received online and in the media for his handling of an incident at Kansai International Airport, where Taiwanese passengers were stranded because of damage caused by Super Typhoon Jebi. According to a popular social media post on PTT—Taiwan's largest native bulletin board system with an online culture similar to that of Reddit—Su did nothing to help Taiwanese passengers, who were forced to board buses arranged by the Chinese consulate instead. Many Taiwanese felt insulted, as this touched a nerve related to the political tension between Taiwan and China as a result of the Cold War rivalry as well as the rising Taiwanese identity over a Chinese one on the island after the turn of the century. Taiwan's mainstream media outlets, which often take user posts from PTT to fill up 24-hour cable news broadcasts or fuel online engagement, soon picked up the story and made sensational headlines. Comments and criticism flooded social media, slamming the Osaka office diplomats and the ruling Democratic Progressive Party (DPP) government for failing to rescue their fellow citizens. Political pressure also came from inside the DPP, as candidates worried that this might have a negative impact on the upcoming elections. Stress and desperation finally led Su to take his life. One day after Su's suicide, a fact-checked report was released by Taiwan FactCheck Center to rebut the Chinese rescue story. "Fake news!" people cried. But this correction was too late to save his life.

Local representatives were not the only ones on the ballot in November 2018. Several national referendums, including proposals for same-sex marriage, gender equality education, and nuclear power plants, were also taking place on the same day. Political parties and candidates, religious groups, media outlets, influencers, and even cyber armies from China all came to join this massive race of "discursive engineering" (Graan, Hodges, and Stalcup 2020). The stranded Taiwanese at Kansai Airport, unfortunately, provided the material for political struggle. Sensational clickbait, misleading images, propaganda, rumors, memes, and trolling flooded the digital space, especially on Facebook, the most popular social media platform in Taiwan, and LINE, a popular messaging app similar to WhatsApp. Since the mid-2010s, Taiwan, like many other places in the world, has suffered greatly from an unprecedented condition of information disorder (Wardle and Derakhshan 2017) caused by the overabundance of false and misleading information running rampant in digital spaces, a state that was marked by Oxford University Press's Word of the Year as "posttruth." This posttruth condition reached its height in 2018 with the race for local representatives and national referendums heating up and disinformation from both within Taiwan and beyond meddling in public conversations. According to research by the V-Dem Institute (2019), Taiwan suffered the most from foreign online disinformation campaigns, mainly from China, among 202 countries in 2018. In many ways, Taiwan in 2018 was much like the United States in 2016—political struggle, war of words, a polarized public, and, most importantly, the pervasiveness of "fake news."

A few days after the incident, on a Wednesday evening, I sat with Cofacts's developers in their weekly meeting as they discussed Su's suicide in relation to "online rumor" (*wǎnglù yáoyán*)—a term the Cofacts team used to replace "fake news" as they avoided a simple true-false binary—that spread from

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PTT to LINE and then to Cofacts's database.[1] Cofacts, which stands for "collaborative facts," is a fact-checking service that combines a chatbot and a crowdsourcing database to provide fact-checked responses to its users on the messaging app LINE.[2] Initiated by a few civic hackers in a hackathon, Cofacts is one of the grassroots efforts in Taiwan to combat online rumors on a voluntary, citizen-based model. The chatbot provides a simple, fast, and interactive way of fact-checking inside closed chat rooms of the messaging app, allowing users to debunk rumors with a few clicks. Behind Cofacts's chatbot is not an automatic or intelligent machine but the collaborative work of "editors" (*biānjí*) who "google" for facts. These are professionals or students who devote their leisure time to this unpaid, labor-intensive work. Acknowledging that editors are not professional fact-checkers and their fact-checked responses may be flawed, incomplete, or imperfect, Cofacts refuses to see itself as "the arbiter of truth"; instead, Cofacts's cofounder Johnson Liang defines it as "a Wikipedia of online rumors," whose mission is to help those who frequently share unverified messages yet "do not know how to google for more reliable information." By putting an emphasis on building and maintaining an open platform where different voices can be heard without barriers, Cofacts endeavors to cultivate a community of a shared belief in openness in the fight against rumors circulated in closed chat rooms.

In this article, I introduce Donna Haraway's critical feminist stance of "situated knowledges" to think with Cofacts's remediation and remaking of facts. Situated knowledges are, in Haraway's (1988) words, "partial, locatable, critical knowledges sustaining the possibility of webs of connections called solidarity in politics and shared conversations in epistemology" (584). Indeed, Cofacts joins Haraway in embracing the idea that "only partial perspective promises objective vision" (583). It does not seek to restore the power of knowledge authorities, and it does not recede into endless skepticism. Its embodied practice of "googling for facts," the delegation of truth telling to a chatbot, and the usage of crowdsourcing technologies to remediate facts all register a technopolitical discourse of openness that differs from organizational fact-checker and displays Cofacts's ambition to cultivate an informed and participatory community in the fight against online rumors while also challenging the fact-checking practice that presumes singularity, disembodied objectivity, and, most importantly, authority.

The aim of this article is not to evaluate the effectiveness of fact-checking or to argue whether fact still exists. Rather, I want to put fact-checking in a specific social context to understand what kind of politics it calls solidarity and what shared conversations in epistemology it opens up amid the insecurity and vulnerability of living in posttruth. As Jonathan Mair (2017) argues, what we see as posttruth might be "a new struggle—or a new phase in an ongoing struggle—over theories of truth, belief and knowledge, in the context of a radically altered information environment" (4). I argue that Cofacts actually participates in a specific struggle over theories as well as guardians of truth, belief, and knowledge between generations. Cofacts's chatbot remediates the voices of young digital natives and acts as a "neutral" challenger to the authority of their parents and senior relatives, who the young think are the main forwarders of rumors. In recent social debates, such as same-sex marriage and pension reform, Taiwan society is often divided along generational lines, mainly between baby boomers (born from the mid-1940s to mid-1960s) and their offspring *yàn shìdài* ("the weary generation," born from the mid-1980s to 2000s). Fierce elections often fuel intergenerational conflicts; highlight different life experiences, beliefs and values, and expectations of what a good life is between generations; and cause family arguments and fights. Online rumors proliferate along this social cleavage and aggravate the intergenerational gap. In a patriarchal society like Taiwan, correcting parents and seniors is seen as impolite and sometimes unfilial, and it can harm family harmony. Introducing Cofacts's chatbot becomes a way that these young people debunk rumors within their family circles without hurting people's feelings. Through the chatbot, yàn shìdài not only claim the power of speaking, of discerning fact from fiction, but also forge new connections of care and reinitiate conversations that have been barred by the invisible walls of chat rooms and the widening gap of values and beliefs between generations. In this sense, Cofacts is indeed a tool of intergenerational care embodied and personified in a fact-checking chatbot.

This article draws on my ethnographic fieldwork with g0v, a civic tech community where Cofacts was born. I take on Jenna Burrell's (2009) proposal of "the field site as a heterogeneous network" (182) and seek to follow people, objects, and stories through various entry points and in multiple networks composed of both online and offline interactions. From my first encountering g0v in 2014 to finalizing this paper in early 2021, I have lived in Taipei, where g0v participants hold hackathons and meetups, for more than three years cumulatively; meanwhile, with my mobile phone and laptop at hand, I am connected with these networks almost every day. I started to pay particular attention to Cofacts around 2017 and attended their weekly meetings as well as editor meetups. In addition to my field notes, I also gathered data from Cofacts's social media accounts, open-access interview notes conducted by journalists and researchers, and the open analytical data of Cofacts's chatbot and website.

Posttruth

Oxford University Press named "post-truth" its Word of the Year for 2016 and described it as "circumstances in which objective facts are less influential in shaping public opinion

1. Many scholars and political commentators (e.g., Collier 2018; Fisher and Karlova 2013; Funke 2018; Habgood-Coote 2019) argue that the term "fake news" has been misleading after excessive usage by politicians to discredit unwanted reporting and propose to replace it with terms such as "misinformation" (inaccurate information) and "disinformation" (deceptive information).

2. The chatbot was first named *Zhēnde Jiǎde* (literally "real or fake") in Chinese when Liang proposed the idea in the g0v hackathon. Its English name "Cofacts" came later in April 2017 after the chatbot went online.

than appeals to emotion and personal belief." The fear that emotion and belief override reason and science has led many to ask when and how facts have lost their valence. Yet, as Dominic Boyer (2018) argues, what is at stake is not about "the death of belief in fact or the absence of truth but rather the appearance of competing parallel spheres of veridiction in which ideological engines of truth-making radiate facts from normative institutional centers all the way into conspiratorial fringe speculation on both ends of the political spectrum" (85). In other words, it is not that fakeness beats truth but that "truthiness"—"something truthish or truthy, unburdened by the factual" (Zimmer 2010)—prevails and disrupts our relationship with facts.

Acknowledging this posttruth condition we are facing while not falling into the binary of true and false, I follow Cofacts in using "online rumors" in this article. While there are not many anthropological studies (with the exceptions of Malykhina 2018; McGranahan 2017; Stalcup 2020; Taylor-Neu 2020) taking up posttruth or fact-checking as their ethnographic inquiries, anthropology does have a long tradition of studying rumors. Reading rumors as social facts (Durkheim 1982:52), anthropologists have shown that rumors tell nuanced stories about racial conflicts, colonial and postcolonial trauma, ethnic tension, and so on when facts cannot be simply put forth under social constraints (see Fassin 2021; Feldman-Savelsberg, Ndonko, and Schmidt-Ehry 2000; Paz 2009; Stewart and Strathern 2004; Wong 2017). However, seeing rumors as social facts does not mean that we should never challenge their claims and ask ethical questions. Quoting Hannah Arendt's (1967) discussion on "factual truth," Karen Ho and Jillian R. Cavanaugh (2019) call our attention to how power and politics invade facts and silence other voices with new sociotechnological tactics. Although factual truth is stubborn to change, "modern manipulation of facts" through mass media, in Arendt's time, and social media, in our time, may "require the bending of the very social and historical context to fit the lie, thus upturning the larger historical and factual fabric in which factual truths are situated, rendering it difficult to make the necessary distinctions between lies and facts, between opinions and larger historical records and social contexts" (Ho and Cavanaugh 2019:162).

The causes of posttruth are multifaceted, complicated by technological advancements, data and platform economy, political struggles, social polarization, and geopolitical relations and confrontation. On the one hand, the Internet has greatly changed people's information consumption habits from a one-way broadcasting mode to a two-way interactive mode, where expert knowledge is diluted and even challenged by lay voices. On the other hand, algorithms are turning social media into "the hype machine" that feeds "the attention economy" (Aral 2020:55–56) with fabrication, manipulation, advertising, trolling, and propaganda. Information manipulators further take advantage of social algorithms (Howard 2016) and technologies of data surveillance to "target the weak points where groups and individuals are most vulnerable to strategic influence," producing what Nadler, Crain, and Donovan (2018:6) call the "digital influence machine." Online rumors are produced in transnational agglomerations that operate at the local and, oftentimes, interpersonal level. They are coproduced by profit-oriented mainstream media and the frantic competition of click-through rate, data-exploiting social networking sites and their black box algorithms, data brokers, trolls and cyber armies, influencers, and, last but not least, split publics (Graan, Hodges, and Stalcup 2020) in which sensational stories and conspiracy theories easily hijack people's attention and erode their trust in professionals.

In Taiwan we can identify a few domestic and transnational actors who take an active part in shaping the media and social environment where posttruth takes root. As social media has become one of the main sources of information and a new political battleground, government agencies, political parties, and politicians compete to win engagement by simplifying policies as memes, implanting advertorials on social media, or covertly funding online groups and accounts to spread favorable information. Intense party competition leads to fake political mobilization, or "paid supporters" (*zǒulù gōng*), in both physical rallies and online spaces, and politicians accuse each other of hiring cyber armies (*wáng jūn*) to manipulate public opinions (*dài fēngxiàng*). Meanwhile, taking advantage of Taiwan's press freedom, China interferes with Taiwan's democracy using advertisements and propaganda through pro-China media as well as coordinated information manipulation with local collaborators such as gangs and influencers (Shen et al. 2020). Online commentators paid by the Chinese authorities to spread pro-China narratives (colloquially known as the "50 cents party" or *wǔmáo dǎng*) and young Chinese nationalists who voluntarily fight online battles for patriotic propaganda (also known as "little pink" or *xiǎo fěnhóng*) troll and spam the social media accounts of Taiwanese officials, celebrities, or media outlets to "distract the public and change the subject" from a discussion that might pose threats to Beijing (King, Pan, and Roberts 2017; Monaco 2017). Transnational content farms also attract "Internet entrepreneurs" to generate tons of posts and videos, including false and misleading information, for click-through rates and advertising share (Liu, Hsu, and Ko 2020). But perhaps the most active and crucial players in this "rumor-scape," appropriating Arjun Appadurai's (1996) term, are social media and messaging app users, who easily share and forward information that is fragmented, emotionally arousing (Martel, Pennycook, and Rand 2020), and often unverified.

Fact-checking is one of the solutions proposed to cope with online rumors. As a journalistic practice emerged in the early 2000s in the United States, early fact-checkers sought to "revitalize the 'truth-seeking' tradition in journalism by holding public figures to account for the things they said" (Graves 2016:27). Since 2016, various fact-checking organizations and tools have mushroomed globally, aimed not solely at public figures but also at online rumors whose sources of origin are mostly unknown. While professional journalists and fact-checkers still do the job (Graves 2016; Lowrey 2017), automatic technologies (Babakar and Moy 2016; Graves 2018; Hassan

et al. 2017) and crowdsourcing approaches (Hassan et al. 2019) are also adopted by social media sites. The effect of fact-checking is constantly challenged. Some argue that fact-checking can cause the "back-fire effect" (boyd 2017; Nyhan and Reifler 2010), as people tend to take what confirms their beliefs and values as facts and see corrections as malicious. But late studies show that fact-checking does have positive effects in different countries and backfire is stubbornly difficult to induce (Porter and Wood 2021; Wood and Porter 2019).

Although posttruth has brought unexpected political results and caused tremendous harm to people and societies, it is still a very new phenomenon that awaits ethnographic exploration in order to have a deeper sense of how theories of truth, belief, and knowledge are shifting along with changing socio-technological-political environments in different settings. In the Vital Topics Forum of *American Anthropologist* published in February 2019, Ho et al. wrote a series of short enlightening essays centering around the question, "What happened to social facts?" These contributing anthropologists approach posttruth from their different fields of expertise and areas of interest and reveal the complexity of the issue at stake. One of the common themes in the essays is the ruptured public sphere deeply ingrained in the gender, racial, and class exclusions and conflicts in American society. Like Sheila Jasanoff and Hilton Simmet (2017) remind us, "Debates about public facts have always also been debates about social meanings, rooted in realities that are subjectively experienced as all-encompassing and complete, even when they are partial and contingent" (752). Indeed, this is the area where anthropologists can contribute the most, just like how we study rumors to illuminate the subjective experiences of hidden social tension. Responding to Jonathan Mair's (2017) call to "overcome" our "aversion to the politics for long enough to study the phenomenon ethnographically" (4), this article hopes to contribute an ethnography of posttruth in Taiwan and, at the same time, to shift the focus (temporarily) away from the dismay of US and European peers and to use the story of Taiwan to draw a critical space on this urgent issue that deeply concerns everyone.

Intergenerational Conflicts in Taiwan

As Dean Jackson (2018) points out, "Effective disinformation campaigns usually draw on preexisting divides within target societies and produce content for which there is societal demand." In Taiwan one of the divides is the intergenerational conflict between baby boomers (born from the mid-1940s to mid-1960s), who dominate political and economic resources obtained from the golden years of being one of the "Asian tigers," and yàn shìdài ("the weary generation," born roughly from 1980s to 2000s), who live an ever-changing and precarious life in the neoliberal ruins (Tsing 2015).[3] Their tension is a result of postwar experiences complicated by regime change, economic transformation, and the shifting national identity alongside technological development over the past decades.

After the end of World War II, the Republic of China, led by the Kuomintang (KMT, or Chinese Nationalist Party), took control of Taiwan. Soon afterward, however, the KMT lost the Chinese Civil War to the Chinese Communist Party (CCP) and fled to Taiwan in 1949. The coming of KMT brought a 38-year-long martial law and the Chiang family's authoritarian regime supported by the United States as the Cold War frontline. Under martial law, people's rights of free speech, assembly, and organization were deprived, and "white terror" silenced political dissents. A series of democratization movements in the 1970s and 1980s finally led KMT to lift martial law in 1987. Since then, Taiwan has gradually transformed from a one-party military dictatorship to a vibrant democracy with direct elections of president every four years since 1996. The Democratic Progressive Party emerged as the biggest oppositional party alongside other minor parties. However, elections also brought about corruption and bribery, party struggles, and social opposition. As democratization was coupled with the deregulation of mass media, politicians competed for media coverage by bragging, brawling, and even fighting in front of cameras. It was nothing strange to see water balloons, eggs, or pig guts thrown around in the Legislative Yuan, Taiwan's parliament.

Economically, the KMT government initiated a series of land reforms and national infrastructure projects from the 1950s to the 1970s, boosting Taiwan's industrialization. Small and medium-size enterprises mushroomed to produce parts and goods for global supply chains. Rapid economic growth won Taiwan the glory of being one of the Asian tigers. In the mid-1980s, with the pressure from within and beyond Taiwan (mainly from the United States), Taiwan's economy began a neoliberal turn. The government started the privatization of state-owned enterprises and embraced market openness (Tsai 2001). The Hsinchu Science Park was established to encourage high-tech manufacturing in replacement of earlier labor-intensive industries. Meanwhile, China's economic reform in 1978 opened up new opportunities for Taiwanese enterprises, which ventured to mainland China for low-cost land, cheap labor, and a new enormous market. Small and medium-size enterprises were gradually replaced by or turned into transnational companies. They benefited from preferential taxes and, in turn, dominated the domestic market and caused a widening gap of class inequality in Taiwan (Lin 2013). As the Cold War came to an end and global capitalism reshaped the geopolitical order in East Asia, the ideological antagonism between the CCP in China and the KMT in Taiwan conceded to economic interest and a shared Chinese identity.

The conjunction of political democratization and economic liberalization at the turn of the century shaped the generational gap. Baby boomers were growing up in an authoritarian regime during the Cold War. Stability was deemed more important than any other political value. They were raised as Chinese and forced to speak the Beijing dialect as the national language. It was also a time when Taiwan experienced rapid economic

3. "Asian tigers" is a term used to describe the rapid industrialization and economic growth of four Asian economies—Taiwan, Hong Kong, Singapore, and Thailand—from the 1960s to the 1990s.

growth. Hot money kept flowing in. As the popular saying goes, "black-hands become bosses" (Shieh 1992); if one kept silent on politics and worked hard, one would be rewarded with a well-off life. In contrast, yàn shìdài were born into a democratic and wealthy Taiwan. A new Taiwanese identity across ethnic lines soared over a Chinese identity, and they no longer saw mainland China as "the lost homeland."[4] Most of them held a college-equivalent degree, yet they were still working poor, spinning around long working hours and contract jobs. When they were ready to develop a career, two waves of regional and global financial crises in 1997 and 2008 hit the country. Low salaries and rising living costs put them under heavy pressure (Lin 2015). Working hard no longer promised a good life. Like the term *yan* describes, they were desperate and angry.

Many baby boomers are parents of yàn shìdài, so their conflicts often take place in domestic settings around expectations about what a good life is. In general, for baby boomers, men and women have distinct social roles. Men should work hard, buy a house, marry a wife, and raise a family. Women can get an education and work, but only marriage and children complete their life. However, for yàn shìdài, house, marriage, and babies are all heavy burdens. Yàn shìdài receives good education; more than 70% of them (female more than male) receive college-equivalent or above degrees.[5] High education delays their time on the job market and consequently marriage and reproduction. Expensive houses and career development further discourage pregnancy. In Taiwan, people see owning a house as the first step toward independence and life security. However, houses are expensive, especially in cities. According to the property prices index made by Numbeo, Taiwan's house-price-to-income ratio is 23.63, ranked 11 among 109 countries in 2021, much higher than any European or North American country.[6] Young couples often face a 30-year loan just to buy a small apartment in an outskirt area. Instead of buying a house and living indebted for a lifetime, some, who are called "the moonlight clan" (*yuè guāng zú*, which literally means "spending up the monthly income"), choose to live paycheck to paycheck. Unaffordable houses are deemed the main reason why young people hesitate to get married and have babies in Taiwan. According to the World Factbook by the CIA, Taiwan has the lowest birth rate in the world, only 1.07 births per woman in 2021.[7] Low salary, low birth rate, and long-lived parents are what they are faced with. When baby boomers criticize yàn shìdài for being "strawberry"—spoiled, vulnerable, and sluggish—yàn shìdài blame baby boomers for controlling resources and being paternalistic.

Intergenerational conflicts broke out alongside political events in the past decade. Young protesters occupied the Legislative Yuan (Taiwan's parliament) in the 2014 Sunflower Movement to resist the signing of the Cross-Strait Service Trade Agreement with China. By saying no to a stronger economic tie with China, the protesters challenged KMT's "economy first" path that, for yàn shìdài, had only benefited capitalists. They no longer believed that economic growth would bring wealth equally to everyone like what their parents had experienced. Meanwhile, the movement also witnessed a rising Taiwanese identity among yàn shìdài in contrast to their parents' Chinese identity. Talking about Taiwanese independence was no longer taboo. The movement was also a war between "old" media and "new" media, with their respective audience of different generations. While the old media, such as television and newspapers, took a negative or even ignorant attitude toward the occupation in the beginning, young protesters held their mobile devices and turned themselves into "guerrilla broadcasters" to "show the world what mainstream media failed to cover." When SNG cars finally came to the occupied site, protesters put stickers on the vehicles, saying "Where is the truth?" or "Thank you for making fake news for my dad and mom" (Lee 2015).

Intergenerational conflicts did not end with KMT stepping down and DPP's leader Tsai In-wen being elected as the president in 2016. A few new policies, including pension reform, transitional justice, and same-sex marriage, by President Tsai became the center of the debate. Escalating tension between generations reached a peak in the 2018 local elections and referendums. Alongside party competition, the campaigns were also staged as the senior versus the young. For example, KMT's candidate Han Kuo-yu, who ran for Kaohsiung mayor, stirred a "Han wave" among seniors across Taiwan as he summoned the memory of the "good" virtues in the "old" time as well as the glory of being a Chinese. Also, the referendum on same-sex marriage split many families. Many baby boomers worried same-sex marriage would corrupt traditional familial values, while yàn shìdài argued that marriage is about love and individual choice. Rumors like "gays want to demolish the law against child molestation" or "legalizing same-sex marriage will attract gays around the world to come to Taiwan for cheap national health insurance and free AIDS medicines" circulated in social media and messaging apps. It was against this background of intense elections and social debates that the Jebi incident, where this article began, took place.

Cofacts and Its Chatbot

Cofacts was built by participants from g0v (pronounced gov-zero), a Taiwan-based civic tech community founded in 2012 that advocates civic engagement through open data and digital technologies. Embracing the open ethos from the free and

4. "Changing Identities in Taiwan (June 1992 to December 2021)," a survey by the Election Study Center, National Chengchi University, https://esc.nccu.edu.tw/PageDoc/Detail?fid=7804&id=6960 (accessed January 10, 2022).

5. "Population with Higher Education," a statistical report by the Ministry of the Interior, Republic of China (Taiwan), https://www.moi.gov.tw/cl.aspx?n=13331 (released April 17, 2021; accessed January 10, 2022).

6. "Property Prices Index by Country 2021," Numbeo, https://www.numbeo.com/property-investment/rankings_by_country.jsp?title=2021&displayColumn=-1 (accessed January 10, 2022).

7. "Total Fertility Rate by Country 2021," World Factbook, https://www.cia.gov/the-world-factbook/field/total-fertility-rate/country-comparison (accessed January 10, 2022).

open-source software (FOSS) movement (see Coleman 2013; Karanović 2012; Kelty 2008; Tkacz 2015), g0v participants tackle various social issues with "hacking" techniques—that is, to exploit the loopholes of a hierarchical system and provide alternative, often decentralized, technological solutions. As one of many groups in Taiwan that took an early interest in issues related to online rumors, they have developed several initiatives to deal with false or inaccurate social media posts or news reports in the past, and Cofacts is their most well-known venture.

In one of g0v's hackathons at the end of 2016, Johnson proposed the idea of building a fact-checking chatbot. "There were so many rumors circulating on LINE, and these rumors can be easily debunked by googling them. As a programmer, I thought we could have an automatic system to do this." LINE is the most popular messaging app across generations in Taiwan, and it is considered a hotbed of online rumors. On LINE, people create all kinds of chat groups, varying from families to friends, classmates, coworkers, neighbors, and hobbyists. Since conversations on LINE are all "private" and encrypted, content moderation is impossible in LINE. It thus creates filter bubbles that block external voices. LINE makes forwarding messages easy; however, it is hard to verify them in closed chat rooms let alone track their sources. These forwarded messages thus form a regime of rumors, proliferating in closed conversations and spreading from one chat room to another.

In the hackathon, Johnson gathered a few like-minded hackers, and they started to experiment with an automatic solution by linking the chatbot with Google Search, but the result was disappointing, as Google sent back even more unreliable information. Then, like many g0v projects that seek help from the crowd, they decided to recruit volunteer editors and crowdsource fact-checking. This decision shaped what Cofacts looks like today. Cofacts officially went online in March 2017. It comprises two parts: at the user's end is a chatbot on LINE that users can submit dubious messages and get fact-checked responses if there is already one in the database and at the editor's end is a website where editors can see all of the rumors submitted by chatbot users and debunk them online. The chatbot provides a pathway, a personified one, for users to access the database simply by having a "conversation" with it. After its launch, Cofacts's users have increased rapidly. By the end of December 2021, it had accumulated more than 425,000 users, with one-fourth age 50 and above, who together sent more than one million messages to the chatbot to check their validity. For nearly five years, around 2,000 "editors" have volunteered to verify or debunk rumors. Besides sending fact-checked responses to its LINE users, Cofacts also publishes them on its website, allowing Internet users to search them via browsers. By December 2021, Cofacts's website had more than 37 million page views.[8] Moreover, two other fact-checking chatbots—Auntie Meiyu and Dr. Message—also link with Cofacts's database, furthering Cofacts's impact. Indeed, Cofacts has become one of the largest fact-checking platforms in Taiwan and one of the largest databases of online rumors in the world.

By linking fact-checked results with a chatbot, Cofacts makes verifying rumors as simple as sharing them. Take this rumor, for example (see fig. 1): "Starting from tomorrow, recreational marijuana will be legalized in California. Be sure to teach kids how to avoid candies and drinks that contain THC because THC is marijuana. Merchants now blend marijuana into food and label it as THC to lower people's alertness. If you buy these candies and bring them to Singapore, Malaysia, or the Philippines, you will be accused of being a drug dealer and be sentenced to death." This rumor appeared in one of my friend circles. Upon forwarding this message to Cofacts, whom I added as a friend in my LINE app, it identified a response in its database and replied, "We found several messages matching what you sent us. Hoax messages are often re-edited and reshared, so please choose a response from below that is closest to your message." Below were two boxes of matching messages and one final box saying, "I can't find a matching message." I clicked the first one—almost the same as the one I sent out with only a small difference that it was not California but Canada. The bot replied, "Cofacts' volunteer editors have different views on this message. One says it contains misinformation, and the other says it is not related to fact-checking." I chose the first one, as it had 169 thumbs-up replies and only four disappointed faces. The bot immediately withdrew it from the database. "A kind person responded to this message: False. Even marijuana is legalized in Canada, food containing marijuana is not everywhere. All places that sell recreational marijuana need to get the government's permission. Also, you can't buy cannabis-infused food in a random supermarket." Along with this message was a reference link, and the bot continued with the following messages:[9]

> (Up arrow emoji) In brief, the responder thinks this message contains misinformation. (Man tipping hand emoji) The above information is provided by a kind person. Please refer to its source of information and make your own judgment carefully. (Speaking head emoji) There are multiple responses to this message. We recommend you read them all before making a judgment. (Exclamation question mark emoji) If you have a different opinion from this message, please follow the link below to write your response.
>
> Does this response help? Yes or No?
>
> Thank you and the other 172 people for your feedback.
>
> (Mobile phone with arrow emoji) Don't forget to forward the above response back to where you received it! (Man tipping hand emoji) If you think you can compose a better response, please submit a better one here.

All of the above conversation happened in just a few clicks.

8. Cofacts releases the analytics of its chatbot and website in real-time, https://datastudio.google.com/reporting/18J8jZYumsoaCPBk9bdRd97GKvi_W5v-r/page/mVfZ (accessed January 10, 2022).

9. Names of emojis are translated according to https://emojis.wiki/.

Figure 1. Screenshots from a conversation with Cofacts's chatbot.

Cofacts's chatbot is designed in a way that users are not only recipients but also contributors. Users are the main source of Cofacts's database. Without these users, Cofacts could not gather rumors circulating in LINE's private chat rooms. Importantly, as we can see from the above conversation, the chatbot carefully avoids speaking like an authority and refuses to act as one unified voice. Fact-checking editors do not hide backstage. They are made present as "a kind person" or "volunteer editors" in the conversation. By training its users to think critically and actively contribute, Cofacts makes fact-checking not just about producing another piece of content in a sea of rumors but a collaborative practice to combat rumors.

Editor Meetups

The Cofacts's chatbot is the digital persona of "the wisdom of the crowd" (Surowiecki 2005). Both the database of rumors and fact-checked responses are generated through crowdsourcing technologies and a collaborative mode of organization, inspired by the FOSS movement. Yochai Benkler (2006) discusses collaboration as the core of commons-based peer production in FOSS, a mode of organization that is "radically decentralized, collaborative, and not proprietary; sharing resources and outputs among widely distributed, loosely connected individuals who cooperate without relying on market signals or managerial commands" (60). This mode of commons-based peer production depends on autonomous participation and what Clay Shirky (2008) calls "spontaneous division of labor" (118). Embracing such a participatory culture, FOSS has given birth to a great number of social collectives around software projects, including famous examples like Linux, Mozilla, and Wikipedia. FOSS also inspires open movements in other social fields, such as open science, open access, and open government. As Christopher Kelty (2008) points out, FOSS projects gather around themselves

groups of highly autonomous yet connected individuals in a specific set of technical, legal, social practices that give birth to "recursive publics," which are "concerned with the ability to build, control, modify, and maintain the infrastructure that allows them to come into being in the first place and which, in turn, constitutes their everyday practical commitments and the identities of the participants as creative and autonomous individuals" (7). Like Wikipedia and other FOSS projects, openness and collaboration are built into the very design of Cofacts. Not only are the code and database of Cofacts free for review and reuse with open licenses but also its operation relies on contributions from loosely connected individuals based on shared code, notes, and protocols. And, most importantly, Cofacts displays a strong desire to cultivate a recursive public by holding regular meetups.

On a Saturday afternoon in November 2017, I was sitting in a Cofacts's editor meetup with 24 volunteer editors. These editor meetups were held every other month in downtown Taipei in addition to bimonthly g0v hackathons, allowing editors to meet every month. It was a public event free of charge. Anyone could sign up and participate. The volunteers that day included college students, scientists, doctors, journalists, engineers, and so on. There were 16 men and eight women, whose ages ranged from 20s to 30s. None of the volunteers were well acquainted with each other, and about half of them were attending a Cofacts's meetup for the first time. The Cofacts team never reviewed, screened, or selected editors. One only needed to register on Cofacts's website to access its database and compose responses. Cofacts also set up a Facebook group for editors to exchange ideas and tips. Editors were encouraged to seek help in the group for rumors that they had no clues for. As the entire process took place online, attending a meetup was not mandatory. However, offline gatherings were crucial for Cofacts to build a community and recruit new editors.

The Cofacts team knows that the biggest challenge of its system lies in the editor part rather than the chatbot part. Cofacts describes its job as "a chase between rumors and fact-checking," as rumors are pouring in every single day and devour editors' time and energy. While there are 2,000 registered editors, only a few dozen of them debunk rumors regularly. Recruiting more editors and pushing for continuous contribution is the most important yet difficult task for the Cofacts team, and editor meetups are one of the solutions. Offline gatherings are an effective way to increase fact-checking rate in a short time and to boost editors' engagement. Person-to-person interaction also helps ease new editors' anxiety about technology and facilitates exchanges of tips and domain knowledge.

After a short introduction of how to use Cofacts's database, we were divided into four teams to compete for debunking rumors. The prize that day was a box of fried chicken. My team comprised two medical students, one scientist, two engineers, and myself, an anthropologist. Fact-checking can be a monotonous and tedious job, but with passionate companions and a tempting reward awaiting ahead, it could also be fun. With our laptops logged into Cofacts's website, we embarked on an expedition amid rumors.

Rumors in the database vary greatly in form and topic. They can look like news reports, government announcements, experts' advice, or personal stories. Some might contain fake images, audio, and video recordings, while others include phishing links. Not all rumors are hoaxes or malicious disinformation though. Some are just outdated information, while some are decontextualized messages. There are also false stories originating from other Chinese-speaking areas, such as China or Malaysia, but disguising themselves as local Taiwanese news. The most common topic of rumors is health advice, followed by fake policies. Conspiracy theories or political propaganda also happen periodically when elections or other major political events take place. In the vast sea of rumors, I picked up one to give it my first try: "Watch this video. Korean restaurants make vegetables with chemicals! How dare you still go to South Korea and use South Korean products. You'll die eating these poisons!" followed by a YouTube link to a three-minute clip from a Korean TV show. Although I did not understand the language in the clip, it seemed to be about introducing something interesting rather than a disclosure of a business secret. However, writing a response required more than a gut feeling. There were three steps to complete a response: first, choose a category from four options ("contains true information," "contains misinformation," "contains personal opinions," and "not related to fact-checking"); second, write a short paragraph of explanation that cannot exceed 140 characters; and last, include links to reference. These three steps were designed to ensure that all responses were mobile friendly and have evidence to support.

The Cofacts team also provided an online editor tutorial, including step-by-step instructions, guidelines for composing responses, and dozens of fact-checking examples. Following the tutorial, I began by analyzing the message: Which statements were suggested as "facts" but might be questionable? Which were the author's personal opinions? What might be the source of this rumor? Why did users think this message was suspicious? And, as the tutorial put it, "What are the *keywords* in the message that can be used for *Google Search*?" (emphasis added by me). I chose "South Korean restaurants," "vegetables," "chemicals," and "poison" and tried different combinations on Google Search. With several clicks, new tabs of web pages opened one after another, queuing in my browser and waiting to be checked. I navigated between different pages, and finally, after several searches, I found a post on a news website that used the same video clips to introduce food models in Japan. Bingo! This was exactly the source I was looking for. But then writing a short paragraph was another challenge. In 140 words, I had to make an argument and put in links of references to convince users. When thinking there would be hundreds of thousands of people reading my response and taking it as a fact, I could not help but take extra caution as if I were writing a research article (even my academic writings have never been seen by so many people). Eventually, it took me around 20 minutes to compose my first response.

Most rumors in the database were much more challenging than this one. They could be a mixture of factual and false information, a conspiracy theory, a fake story that was disguised

as personal experience, or something that needed expertise or domain knowledge to discern. Health-related rumors—which range from unverified food remedies to fake science studies—occupy a big chunk of the database. In the meetup, I constantly turned to my teammates who were medical students for advice. We made jokes but also searched for answers together. In the lonely and self-doubting process of fact-checking, working with a team was a comfort and an encouragement. After immersing ourselves deeply in rumors, we had lost track of time. The host announced the end of the contest. The winning team was honored in front of a screen that showed a big "123," the number of total rumors we all together debunked in the meetup. Fried chicken arrived fresh and hot, and there was just enough for everyone to get a bite. The contest was never really meant for competition but only for fun. We convened as a huge group, chatting, eating, and exchanging thoughts about online rumors with new friends.

A Wikipedia of Online Rumors

Crowdsourced fact-checking is what makes Cofacts different from other fact-checking organizations, which usually hire journalists and researchers to debunk rumors. Cofacts refuses to be viewed as a third-party fact-checker and insists on acting as a platform of different viewpoints. Cofacts's editors do not play the role of professional fact-checkers, who might do interviews, phone checks, or even field visits to find the truth, but they help discern "reliable" sources, including fact-checking reports from professional organizations, and curate online information to make fact-checked information more accessible. Johnson describes Cofacts as "a free market of speech" where everyone can express their ideas and hear different voices blocked by chat room bubbles. As its website states, "What you read on Cofacts is responses written by other users. Cofacts endeavors to collect diverse opinions for you to make the best judgment between the real and the fake. We do not believe in an omnipotent judge. We believe that we can only get close to the truth through the collaboration of citizens. On Cofacts, you can read the viewpoints of others and make your own judgment, and you can also share your thoughts on our platform."[10] Seeing itself as a platform rather than an organization, Cofacts does not want to play the role of "arbiter of truth." Johnson explains, "Cofacts is not a place of absolute truth; instead, it is a platform to display various 'facts,' including fact-check reports made by other organizations. . . . We believe in the free market of speech. Our goal is to become a Wikipedia of online rumors." Johnson's statement resonates with Linus's law, one of the FOSS doctrines—"given enough eyeballs all bugs are shallow." The idea is that fact-checking by volunteers may be flawed, incomplete, or imperfect, but if there is a community of fact-checkers continually working on providing better responses, the quality of the database will improve. It is in this sense that Johnson refers to Cofacts as "a Wikipedia of online rumors."

By calling on Wikipedia, Johnson also refers to its neutral point of view (NPOV) policy. On Wikipedia's NPOV page, it states that "all encyclopedic content on Wikipedia must be written from a neutral point of view (NPOV), which means representing fairly, proportionately, and, as far as possible, without editorial bias, all the significant views that have been published by reliable sources on a topic."[11] This position of neutrality is not a naive belief of objectivity. As tech scholar Joseph Michael Reagle (2010) points out, NPOV "recognizes the multitude of viewpoints and provides an epistemic stance in which they all can be recognized as instances of human knowledge—right or wrong. The NPOV policy seeks to achieve the 'fair' presentation of all sides of the dispute" (11). In a similar vein, Cofacts claims itself as a platform of different viewpoints rather than an authoritative voice of facts. What users receive from the chatbot is not a final report but multiple responses that form a growing conversation between different perspectives. Cofacts's users can rate these responses or even add a new one. Cofacts's collaborative design allows fact-checking to embrace an ethical, affective, bodily engagement in "practice of objectivity that privileges contestation, deconstruction, passionate construction, webbed connections, and hope for transformation of systems of knowledge and ways of seeing" (Haraway 1988:585). As one editor, Butterfly, says, "This is no longer an era where truth is confirmed by a single authority. The more people to help out, the better."

To better achieve NPOV, Cofacts designs four categories of rumors in a way that does not fall into the true-false dichotomy and allows room for different voices. Editors can mark a message mixed with facts and lies as "contains true information" or "contains misinformation" according to their sources of references and judgments. The Cofacts team does not review editors' responses. Nevertheless, as the team told me, in their observation, editors tend to be strict and mark messages as "contains true information" only when they cannot find any factual error. Another important feature that also resonates with NPOV is the category of "contains personal opinions." This is a new category added in August 2017 because of the increasing numbers of forwarded messages that are more about personal opinions or experiences that are impossible for editors to mark as true or false. "New editors might feel frustrated if most of the unchecked rumors are all personal opinions," Johnson explains, "so we think if it's impossible to ask editors to ignore them, why not allow editors' viewpoints to be expressed so that people can exchange different ideas and users can make more informed judgments?" (Johnson 2017). Unlike the other categories, marking a message as a personal opinion means that the editors do not need to provide any "evidence." Instead, editors are encouraged to mark "which part of the message in question contains personal opinion" and include references of different "viewpoints." Most of these messages relate to highly controversial topics in Taiwan such as same-sex marriage or political conspiracies. Hence, by

10. Cofacts's website, https://cofacts.tw/ (accessed January 10, 2022).

11. See Wikipedia: Neutral Point of View, https://en.wikipedia.org/w/index.php?title=Wikipedia:Neutral_point_of_view&oldid=1028265652.

marking a message as a personal opinion, editors can then raise different perspectives in their responses.

Haraway's concepts of situated knowledge and embodied objectivity provide helpful tools for me to think with Cofacts. In her article titled "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," Haraway (1988) sets a goal to find "an epistemology and politics of engaged and accountable positioning" (590) that reclaim science's objectivity without treating knowledge as abstract, totalizing, and disembodied on the one hand and falling into social constructionists' trick of seeing science as a mere rhetoric and power game on the other hand. Recognizing one's positioning and vision in shaping their practice of knowledge making, Haraway proposes to form partial connection through embodied objectivity and call solidarity with the positioning of the subjugated—"female and colonized bodies and maybe also white male computer hackers in solitary electronic confinement" (576). While this article was staged in a specific conversation of social studies of science and technology in the late 1980s, it continues to resonate with many of our current debates surrounding facts, knowledges, and sciences. Cofacts does not produce knowledge per se, but it shares with situated knowledges an emphasis on embodied objectivity, which takes account one's own "semiotic-material technology to link meanings and bodies" (585) and seeks to make connections in the troubled present. In Cofacts, editors rely heavily on the embodied techniques of googling—improvised coordination among hands, eyes, mind, keyboard, screen, database, browser, and signal. Such bodily and cognitive techniques of using platform technologies combine with the network ideology of openness and form the material-semiotic foundation that makes Cofacts the wisdom of the crowd. But merely googling is not enough to fight posttruth; using crowdsourced fact-checking is to admit the limitations of one's knowledge and to seek help from others, to reject authoritative judgments, and to make different voices heard and contestable. Crowdsourced fact-checking is, in Haraway's (1988) words, "about communities, not about isolated individuals. The only way to find a larger vision is to be somewhere in particular" (590). It is never isolated and disembodied; instead, it is always connected and requires bodily engagement and mindful care in search of facts. Indeed, by calling solidarity in countering online rumors and shared conversations in openness, Cofacts engages in the struggle over theories, as Mair reminds us, and guardians, which I will add, of truth, belief, and knowledge.

From Forwarding Rumors to Forwarding Care

For Cofacts, its posttruth politics is embedded in a larger intergenerational struggle between yàn shìdài and baby boomers that I outlined earlier. Cofacts cofounder Johnson makes clear that not everyone shares the same skills of engaging in fact-checking: "Many users are still not familiar with googling for more reliable information. In LINE's closed network, misinformation is easily forwarded and spread around. This chatbot offers a service for those who know how to forward messages but are not skilled at googling to check the credibility of online information."[12] Under this rhetoric, "facts" are to be "googled," and fact-checking relies on the ability of "using" the search engine. People who know how to navigate, search, and evaluate online information can become a Cofacts editor. Others cannot. Receivers of online rumors are thus divided into two groups: yàn shìdài, who are "digital natives" and take the Internet as an interactive platform where voices are multiple and contestable, and baby boomers, who are "digital immigrants" and passively receive information from the Internet without contesting it.

This "digital natives versus digital immigrants" rhetoric is commonly heard in Cofacts to argue that baby boomers are innocent forwarders and victims of online rumors given their lack of knowledge and skills in navigating the World Wide Web. The Cofacts's event page states, "By participating in Cofacts' editor meetups, you are helping our seniors who are not familiar with high-tech products to improve their media literacy."[13] Or, in the third meetup—which took place on the traditional Double Ninth Festival, a day when people honor the elderly and practice filial piety—Cofacts posted, "According to tradition, we ought to wash our mothers' feet on the Double Ninth Festival. But today, we should debunk rumors for them." It was also common in conversations with editors that they talked about receiving rumors from their parents or senior relatives. An editor noted that seniors forward messages out of love and care and correcting them directly might "hurt their emotions."

Indeed, many rumors in the Cofacts database share a similar rhetoric that combines a language of authority and a language of care—a common communication style that yàn shìdài experience with their parents. On the one hand, these rumors are often wrapped as expert advice, official announcements, or statements from an authoritative figure—for example, "a doctor says that drinking tea regularly can help prevent cancer" or "a new speed limit on highways will be effective from the 20th this month." On the other hand, they usually begin or end with "this is a kind reminder," "my dear friends," "pray for you," "share with your loved ones," and so on, making the act of forwarding a gesture of care. The spreading of rumors heavily depends on affects—fear, anxiety, love, care, and so on—that not only push people to "believe it rather than not" (*níng kě xìn qí yǒu*) but also trigger them to forward and share. William Mazzarella (2009) reminds us that "any social project that is not imposed through force alone must be affective in order to be effective" (299). Rumors are no exception. Forwarding rumors is never simply sending a piece of information; rather, it is to connect and care through affective resonance in the digital

12. Cofacts interview by students in the Department of Communication and Technology, National Chiao Tung University, April 6, 2018. Full transcript available at https://hackpad.tw/ep/pad/static/X1i6gJNdsZH (accessed January 10, 2022).

13. Cofacts 20th editors meetup, https://cofacts.kktix.cc/events/cofacteditor20 (accessed August 21, 2020).

space. Ironically, the generosity of care precipitates the spread of online rumors.

Whether it is true that baby boomers are more prone to forward and spread rumors needs more empirical studies to prove, which is beyond this paper's goal, we can see how this rhetoric serves yàn shìdài in the struggle against their parents and patriarchal society over theories of truth, belief, and knowledge. The bot is not any sort of authority; it is collective and decentralized, coproduced by loosely connected young people who take faith in the power of open collaboration. By pointing out what is true and what is false through the collaborative effort of fact-checking and the mediation of the chatbot, the bot becomes the agent of yàn shìdài to challenge the patriarchal hierarchy at home and in society. Indeed, crowdsourced fact-checking is both a political and epistemological reconfiguration of what fact is and who has the right to produce it.

However, what propels many young people to participate in Cofacts is not just an attempt to challenge the patriarchal mode of knowledge production but, most importantly, the desire to "help" seniors in navigating the digital space through the sea of rumors. By introducing Cofacts's fact-checked responses or even teaching senior family members how to use the chatbot, these young editors and users avoid harming family harmony while providing more accurate information and a self-help tool. As one of the editors told me, "I was troubled by all the rumors forwarded by my parents to our family group. But now, with Cofacts, I can send back the right information and correct them without hurting their feelings. I don't need to say they're wrong. I only need to forward what the bot says." Indeed, the chatbot is not simply a tool for fact-checking but also an attempt of yàn shìdài to reconnect with baby boomers and reinitiate conversations that have been barred by the invisible walls of chat rooms and the widening gap of values and beliefs. It offers a buffer zone that prevents confrontation and reorients care from forwarding misinformation to forwarding fact-checking responses. It is intergenerational care instead of intergenerational struggle that motivates this crowdsourced fact-checking project.

Although the chatbot works better on health-related rumors compared with rumors about highly controversial social issues or political disinformation because the latter are more susceptible to confirmation bias, the introduction of the chatbot does raise people's awareness of misinformation and make people more cautious when sharing unverified messages. But even corrections by a chatbot can sometimes be uncomfortable. Beginning in 2019, with funds from platform companies including Facebook and Google, Cofacts and other fact-checking services started to work with community colleges, senior service centers, and local libraries to teach seniors media literacy and how to discern online rumors using fact-checking chatbots and tools. In these classes, young instructors avoid addressing senior students as rumor forwarders and use themselves as an example of how harmful rumors can be. They also encourage senior students to become fact-checkers in their chat rooms by forwarding unverified rumors to the chatbots to get fact-checked responses. These offline classes remediate the chatbot, making it both the agent of fact and the agent of care that connects, even partially, different ideologies, worldviews, values, and beliefs in posttruth Taiwan. As María Puig de la Bellacasa (2017) says, care is "a critically disruptive doing that can open to 'as well as possible' reconfigurations engaged with troubled presents" (12). Even though Cofact's crowdsourced fact-checking can never catch up with the production and dissemination of online rumors, its chatbot, editors, and all of the classes and services surrounding this system will continue to connect, to care, and to "stay with the trouble" (Haraway 2016).

Conclusion

On September 23, 2020, the World Health Organization (2020) published a statement on "managing the COVID-19 infodemic," in which it raised a warning that "an infodemic"—an overabundance of information that "undermines the global response and jeopardizes measures to control the pandemic"—has taken place alongside the COVID-19 pandemic. From posttruth to the infodemic, online rumors seem to have become more rampant, harmful, and harder to debunk. All sorts of conspiracy theories circulate alongside rising COVID-19 cases, some of them leading to racial discrimination and even hate crimes against Asians in North America. Among these stories, the story that COVID-19 was leaked from a Chinese laboratory was disputed by scientists and the liberal press. Social media platforms also banned any post related to this theory. However, after a year, in May 2021, President Joe Biden ordered a renewed investigation into the origin of the novel coronavirus and indicated that the lab leak theory remains one possibility. Facebook soon announced a change of policy that it would no longer take down posts claiming COVID-19 is man-made. Members of the scientific community, the press, and government officials—those who used to be the speakers of facts—are no longer firm and steady. This capricious state of facts is where we are now.

Crowdsourced fact-checking is to accept this indecisive, easily changing, and vulnerable condition of facts and to provide an alternative way to reconstruct facts without resorting to authorities. In this article, I argue that Cofacts's crowdsourced fact-checking joins what Haraway (1988) calls embodied objectivity that insists on "the particularity and embodiment of all vision" (582) to challenge the fact-checking practice that presumes singularity, disembodied objectivity, and authority. Underpinning Cofacts's fight against online rumors is the intergenerational conflicts between yàn shìdài (roughly age 20–40) and baby boomers (roughly age 60–80) that are ingrained in different life experiences, beliefs and values, and expectations of what a good life is and that have grown intense in the recent elections and in social debates such as same-sex marriage and pension reform. By taking up a technological solution that emphasizes openness, Cofacts appeals to yàn shìdài in their fight against the black box production and chatroom-to-chatroom transmission of online rumors, which they believe have harmed their family harmony and posed a great threat to Taiwan's democracy. As its name indicates, Cofacts recognizes subjective

positionings and turns them into opportunities for collaborative help in rebuilding facts in a posttruth condition. The embodied practice of "googling for facts," the delegation of truth telling to a chatbot, and the building of a Wikipedia-like community all register a technopolitical discourse of openness that challenges the conventional knowledge-making practices by experts, authorities, and the powerful. Through these material-semiotic technologies, Cofacts opens a space for yàn shìdài to claim the power of speaking from their parents and the patriarchal society on the one hand and to form new connections of care between generations on the other hand. By turning forwarding rumors to forwarding fact-checking responses, the chatbot becomes both an agent of fact and an agent of care.

Fact-checking offers us something to grip in the turmoil and uncertainty of whether a fact is still possible when it is eclipsed by feelings and beliefs. There have been many studies in political science, communication, and computer science to investigate the effectiveness of fact-checking, but few have tried to understand its epistemological implications, cultural meanings, and social impacts. This paper offers an anthropological venture into this emerging, yet undoubtedly critical, contemporary issue. It is an invitation to anthropologists to join the inquiry of "what happens to social facts" in our troubled present and to explore how we might trace its roots, follow its trends, and bring insights to possible remedies.

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Comments

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Digital Care: A Response to Lee

Mei-Chun Lee's "Checking Facts by a Bot" is a remarkable ethnography of posttruth politics and a very valuable contribution to anthropological research on media and digital information. Yet what I found both most surprising and touching about the essay's analysis of the Taiwanese fact-checking service Cofacts is how it revealed a mission of intergenerational care at the center of this exercise in digital activism. As Lee concludes, "Indeed, the chatbot is not simply a tool for fact-checking but also an attempt of *yàn shìdài* ("the weary generation") to reconnect with baby boomers and reinitiate conversations that have been barred by the invisible walls of chat rooms and the widening gap of values and beliefs. It offers a buffer zone that prevents confrontation and reorients care from forwarding misinformation to forwarding fact-checking responses. It is intergenerational care instead of intergenerational struggle that motivates this crowdsourced fact-checking project."

We probably do not talk about digital care as much as we need to. Indeed, the whole posttruth/infodemic line of accusation has seemed remarkably disinterested in exploring how care, or the lack thereof, contributes to the vulnerability of liberal veridiction in the digital era. The problem of vanishing facts is usually posed as some combination of malicious, manipulative actors (e.g., trolls and bots and sometimes presidents) polluting the informational ecosystem on the one hand and increasing informational speed and abundance overwhelming human capacities for judgment on the other. When I last did fieldwork with news journalists in 2010, this was certainly how they understood their situation. They had a clear appreciation for how the dynamics of digital information flow had crippled journalists' expert ability to manage the creation and communication of facts. "It's the golden age of opinion," I remember one *Wall Street Journal* journalist telling me.

Yet I think what Lee's analysis of digital care surfaces is the remarkable carelessness of so much digital activity. The digital world that neoliberal economization elicited is one that is built for flow, the faster the better because that means more monetizable clicks. Its algorithms are generally content agnostic and supportive of whatever taps into the most precious commodity of attention. As elsewhere in capitalism, maximal automation is always the goal despite value being measured in human labor time (e.g., attention and engagement metrics). Nonetheless, as the FOSS movement has proved time and again, there are impressive countercurrents of care even within this world, efforts grand and global (like Wikipedia) and local and humble (like Cofacts) to utilize the lateral capacities of digital media for collaborative projects of knowledge making and sharing.

It is perhaps unsurprising that these projects rarely seem adequate to stanching flows of industrialized misinformation. Veridiction is heterogeneous now in a way that it was not during the twentieth-century heyday of liberal broadcast publics. But I think it is also important to note that liberalism has long been careless with rumors. Liberalism loves talk, talk as a proxy for freedom. The wilder the talk, the greater the freedom liberalism imagines it is delivering its subjects. For the same reason, liberalism is much more comfortable with lies than it pretends to be. It is somewhat of an open secret that liberalism is happy to endorse lying so long as those lies either support the big lies of

liberal ideology (e.g., the equity of capitalist society, the possibility of endless economic growth) or do not inspire actions that constitute direct challenges to liberal hegemony. My friends who grew up in state socialist East Germany remarked on this often. "In the GDR the wrong words could get you thrown into jail, because ideas had value to them. Here," they said speaking of liberal democratic unified Germany, "you can talk about anything you want, but since talk is cheap, nothing ever changes." Liberals are constantly astounded when fascists and socialists not only believe their words but seek freedom through their realization.

Anthropology at its best offers intimate glimpses into worlds that resonate with other worlds. Lee seems to understand that there is something ironic or perhaps even slightly comic about Cofacts's do-it-yourself efforts to harness chatbots and search engines to remedy rumor. It did remind me of the old *Parks and Rec* joke about Ask Jeeves, that it is like asking "a fake butler to google things for you." But as noted above, I found this ethnographic portrait touching in Cofacts's sincere efforts to stay with multiple troubles and foster digital care in the careless context of late-stage Taiwanese neoliberalism. It makes one wonder and anticipate what kinds of relations might emerge in a post-neoliberal digital world.

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Mei-Chun Lee's article, "Checking Facts by a Bot: Crowdsourced Facts and Intergenerational Care in Posttruth Taiwan," offers a rich, ethnographically grounded exploration about how facts are coproduced by humans and machines in the so-called posttruth era. While this is a global question, a look at how cybernetic fact-checking plays out in sociotechnical cultures different from the Euro-American standard is a welcome move, especially when it comes to a world region—Asia—that has quickly become a leading player in global tech.

The article invites approaching collaborative facts—as Lee's subjects call them—as one possible manifestation of what Noortje Marres deems experimental facts. Experimental facts denote those ever-emergent, highly iterative modes of fact production attuned to the "total test environments" (Marres and Stark 2020) online platforms create. No longer reliant on authoritative forms of fact production prevalent in the Fordist era, experimental facts reflect how new cybernetic media are rearranging epistemology in ways that blur established forms of boundary making between fact and fiction, objectivity and subjectivity, human and nonhuman agency.

In the case of Cofacts, these new mediations take the form of partly automated crowdsourcing of truth judgments by multiple actors. Crowdsourcing is a promising notion Lee takes from the "native" lexicon that would deserve further theorization, in line with recent efforts at revamping crowd theory in anthropology and new media studies (Hayden 2021). This would prompt questions such as the following: Are all crowdsourcing processes the same? To what extent is the assumption of a "wisdom of the crowd" more than industry public relations? When is the wisdom of the crowd indeed wise, swarm intelligence indeed intelligent? Could they be, on the contrary, dysfunctional or even destructive?

Fascism, for instance, both in its analogue and digital versions, has been described in terms that approximate those of crowdsourcing. Hitler and Mussolini skillfully appropriated ideas and slogans from their followers while constantly testing the reception of their speeches among the crowds and adjusting them accordingly (Paxton 2007). More recently, Jair Bolsonaro's aspirational fascism (Connolly 2017) has relied heavily on digital crowdsourcing from his followers, appropriating commonsensical notions already present in many segments of the Brazilian population such as a "good criminal is a dead criminal" (Cesarino 2022).

So what sets Cofacts's chatbot apart as a democratic form of crowdsourcing rather than a fascist one? The absence of a clearly visible personal leader or guru may seem like a safe place to start, but then, this is also largely the case of digitally crowdsourced publics such as QAnon's. Could it relate to Cofacts's deliberate disavowal of the "God trick" (Haraway 1988) or to its limited reliance on market signals and attention economy metrics? Could it be that by encouraging its users to actively participate in fact-checking, the chatbot indirectly trains them into denaturalizing received information or even reverse engineering disinformation? What checks and balances, human and nonhuman, are in place to prevent crowdsourcing from escalating into extremist or conspiratorial dynamics? Are there safeguards in place to prevent Cofact's chatbot from being hacked by disinformation entrepreneurs? Exploring these questions through ethnographic and comparative studies may help shed light on how to counter disinformation democratically without relying on claims to disembodied objectivity.

Finally, these questions may be further advanced through another of Lee's interesting lines of argument, that the chatbot can act as "both an agent of fact and an agent of care." If platforms have ushered our public spheres into an era of "affective facts" (Massumi 2010), then debunking disinformation must necessarily include an affective dimension and operate at the level of mediations rather than content. If people already know the factual truth in advance of online engagement, then relational dimensions may bear more weight in such epistemological negotiations. Lee's account suggests that delegating truth telling to a chatbot could serve as justification for subjects to suspend their own hard-pressed truths in the name of repairing intergenerational affect without "losing face." It would be interesting to follow up Lee's findings through a more nuanced ethnographic exploration of how baby boomers respond to being fact-checked by bots and, conversely, how their children and grandchildren react in those instances where such stratagem fails.

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Mutually suspicious publics increasingly appear as an ingrained feature of national (and transnational) mediascapes. In contrast to once-hegemonic imaginaries of an integrated "public sphere" organized through centralized media infrastructures, in many contexts, media liberalization and new communication technologies have conditioned multiple publics that each make competitive claims to represent truth, morality, and popular authority (Graan 2021; see also Rajagopal 2001). Such environments are often described as "bubbles," "silos," and "echo chambers," if these metaphors both mark difference and reinscribe incommensurability across public conversation (Slotta 2019). As recent history demonstrates, these mutually suspicious publics provide fertile ground for the assertion of rival knowledge claims (e.g., "alternative facts") alongside other varieties of online rumor. In turn, there have also been fierce metadiscursive battles over what counts as appropriate participation in publics (Graan 2022; see also Udupa 2019): just consider the transnational debates on "free speech," "political correctness," and "cancel culture." Although one can find hope in feminist, LGBTQ+, and antiracist social movements that have changed public discussions and attitudes about gender, sexuality, and race, the backlash to these movements is real, fueling a situation of mutually antagonistic publics. It can all be quite depressing, really.

It was thus with surprise and delight that I read Mei-chun Lee's excellent essay, "Checking Facts by a Bot: Crowdsourced Facts and Intergenerational Care in Posttruth Taiwan." If the problem of political polarization so often seems intractable, Lee's analysis brings into relief the strategy and labor, and the ethics and politics, behind one notable effort to bridge split publics. Cofacts, as Lee explains, is a Taiwan-based fact-checking service that maintains a crowdsourced database of alleged online rumors and assessments of them. Users can consult the database through a chatbot on a popular messaging app, LINE. The service went online in 2017. Crucially, as Lee emphasizes, Cofacts resists claims to some overriding source of authoritative knowledge. Rather, it embraces openness and discussion—commitments reflected in the service's name, which is an abbreviation of "collaborative facts." Because of this structural humility, Lee argues, the Cofacts service creates a "buffer zone" between the generationally marked baby boomer publics and those of their children, "the weary generation" (*yàn shìdài*). The chatbot allows younger uses to remediate their own suspicions about the online rumors believed to circulate within boomer publics but in a fashion that resists confrontation and rather foregrounds dialogue and pluralism. The digital affordances of the chatbot further facilitate mediated interactions between intergenerational users that can substitute for potentially hazardous face-to-face conversations on difficult topics. Lee thus concludes that Cofacts amounts a kind of care, whereby young users can subtly challenge seniors without undermining norms of intergenerational respect.

In important ways, then, Lee's article thus casts new light on the problem of polarized publics. Fact-checking, like online rumor, is a practice of publicity. Purveyors of online rumor craft a particular kind of interdiscursive environment amid publics, for example, one that foregrounds a particular kind of concern or that benefits some political interest. In contrast, fact-checking works to police public spheres: it marks some discursive interventions as legitimate for further circulation (under tests of evaluation), while others are cast as illegitimate.

However, in contexts of political polarization, fact-checking can appear as members of one public projecting their truth standards onto a rival public. Infamously, during Donald Trump's presidency in the United States, "fake news" went from being a term used by mainstream news analysts to describe obviously fictionalized news reports to being a term that Trump and his supporters would use against mainstream news outlets. In essence, the term mediated rival practices of evaluating truth that served to distinguish and separate a right-wing public of Trump supporters from centrist and left-wing publics. Lee describes a parallel situation in Taiwan, where practices of commentary and evaluation served to differentiate and separate more liberal youth publics from the more conservative publics of the older generation.

The kind of fact-checking innovated by Cofacts, however, avoids the irreconcilable contest over truth found in the United States. As Lee explains, rather than elevate one obvious regime of truth as a standard, the service's approach to crowdsourcing the evaluation of online rumors results in conditional, partial, and uncertain knowledge claims, which are then made available for further consideration and evaluation by users. Truth claims are less "checked" than "captioned." The result is different kind of discursive infrastructure, one that is the product of a "recursive public" that seeks "to provide an alternative way to reconstruct facts without resorting to authorities." If in many polarized contexts fact-checking reinscribes separation (Slotta 2019), Lee shows how Cofacts's approach to fact-checking instead creates connections between Taiwan's generationally distinct publics. Scholars concerned with polarized publics should thus be paying attention.

Importantly, Lee's analysis underscores how Cofacts implements a reciprocal politics and ethics of knowledge in service of a new kind of public. In forgoing claims to authoritative knowledge, Cofacts's practice amounts to "a political and epistemological reconfiguration of what fact is and who has the right to produce it." Yet, as Lee contends, this politics of knowledge is indissociable from the ethics of solidarity that motivate those who contribute to and use Cofacts. This ethics is defined vis-à-vis the threat of polarized publics and intergenerational conflict. Instead of exacerbating polarization and antagonism, Cofacts's banner of solidarity grounds constructive forms of cross-public communication. In today's world, this is no small feat, and Lee's analytic and theoretical account of Cofacts gives us the framework we need to appreciate the accomplishment.

Lee shows that the contemporary politics of truth is a matter not only of epistemology but also of ethics. She thus presents a profound reading of the problems of publicity in polarized societies, where conflicts between publics so often become lodged in conflicts between intimates. In articulating the promise of Cofacts, Lee provides an important glimmer of hope, namely, that the impasse of political polarization can be bridged without compromising one's convictions.

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This article is written from the perspective of anthropology and provides an in-depth analysis of Cofacts's contributions to fact-checking in Taiwan. Cofacts is one of the fact-checking organizations that emphasizes collaboration and crowdsourcing from the public to debunk mis/disinformation on the messaging app LINE. They have demonstrated how the audience engages with fact-checking to help them make sense of public narratives. This article also introduced that the core of Cofacts is volunteers who have backgrounds in computer science and who have organized g0v for digital transition and Cofacts for fact-checking in Taiwan.

In addition to the research method of ethnographic approach in this article, the qualitative research of anthropology has transited from field sites to websites in the digital age. Online ethnography (Hetland and Mørch 2016) is similar to traditional ethnography, so the researcher could conduct immersive observation on the Internet (Bengtsson 2014). It could provide researchers with in-depth observations on the digital footprint of users from social media and websites. Online and offline research methods could be converged to make greater contributions to future research.

Like other fact-checking organizations in Taiwan, Cofacts believes that the truth exists. In fact, a "posttruther" does not deny the existence of objective facts. More epistemologists have tried to make sense of the idea of correspondence to reality and explain a particular statement as a "fact" (Fuller 2018). Even so, it is hard to make fact-checking about political posts and statements, especially since political polarization and echo chambers have been created in the age of posttruth. Fake news may not be persuasive in cultural and political conflicts (Peters, McLaren, and Jandrić 2020).

It reminds us to realize the limitations of fact-checking. What we need to be concerned with is that people are more willing to trust information that appeals to their emotions and personal beliefs than to seek out facts and objective information (Cook 2018). Fake news does not concern ideas but facts. The "marketplace of ideas" was always about ideas, not facts (Waldman 2018).

According to the author, the difference in methodology between Cofacts and other fact-checking organizations is that most fact-checking organizations usually hire journalists and researchers to debunk rumors. Cofacts said that they do not believe in an omnipotent judge. They believe that they can get close to the truth only through the collaboration of citizens. The author argued that the concept of "embodied objectivity" insists on the particularity and embodiment of all vision to challenge disembodied objectivity. It is important what objectivity the fact-checking service provided and what we believed. It suggests that critical pedagogy advocates that people continuously dialogue with society through themselves so that they can get closer to partial reality.

Habermas (1989) has proposed the concept of "the public sphere" as a metaphor of media. As Graves (2016) argued, the work in building a new journalistic institution for fact-checking is the same truth seeking as a traditional journalist. As a matter of fact, the fact-checking movement in the world included journalists around their countries. The concepts of "debunk," "truth," and "fact" always appeared in this paper quite the same as journalistic discussions in investigative journalism. It is a big question in the history of journalistic research, as well as in the age of posttruth. This debate coincides with the continuation in journalism of whether elite journalists or active citizens could reach the truth or authenticity we need in a democratic society.

In the 1920s Dewey and Lippmann debated on the role of media and the public in a democratic society. Dewey argued that democracy depends on the participation of citizens. Dewey believed that the public is capable of rational thought and decision-making. Although the quality of citizens may be flawed, it can be cultivated. Lippmann argued that the democratic quality of citizens is generally poor. Experts like journalists have their duties to ensure that the public be informed and then enhance democracy for the public (Iggers 1999). Under Lippmann's argument, it is hard for the public to participate in democracy.

Comparing the ideas of Lippmann and Dewey shows a clear contrast between elitism and antielitism (Schudson 1999). Following the debating, Cofacts disagreed that experts like journalists or researchers have more power than the public. They believed that the public could actively participate to find the truth in public lives.

Fact-checking organizations are just like news media and journalists whose verification of fact-checking is subject to the public. Any fact-checking units need to represent the truth with transparency and objectivity in a democratic community. All of the outcomes of fact-checking are actually fact-checked greatly by the public. The public with media literacy and education is able to distinguish truth and falsehood.

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Confronting the Politics of Knowledge

How can the politics of knowledge be done differently? What alternative epistemic practices and communities are possible?

To what extent can social and political structures be challenged? These questions have motivated key debates, thinking, and practices in anthropology, science and technology studies, geography, critical data studies, and media studies, among others (Crawford, Gray, and Miltner 2014; Kitchin 2014; Leszczynski and Elwood, 2022; Milan 2020; Ricaurte 2019; Suchman 1993, 2011). The labor, practices, standards, logics, and values involved in engineering data, databases, and digital infrastructure continue to be the focal points in such discussion and the site of intensified contestation, as we know more intimately about the knowledge that feeds large-scale data collection and processing and the specific theories that have been utilized to train data analytics and machine learning systems (Crawford 2021; Halpern 2022; Mattern 2016). For those concerned with the consolidation of social and political power through the production of data, knowledge, and infrastructure, it remains crucial to explore the possibility that is available and viable to confront the politics of knowledge.

Leveraging the case study of Cofacts and civic hacking in Taiwan, Lee's article provides much to think about in regard to alternative epistemic practices. With the vivid ethnographic account in the article, Lee leads readers through the process of learning with her fellow participants of Cofacts to trouble a simple, dichotomous categorization of true or false statements and undo a paternalistic practice of care (but also see Lee 2023). The value of their work lies in their collaborative cultivation of the sensibilities and practices of calling out rumors in ways that challenge the legitimacy of certain discourses without further rupturing the familial ties and the public sphere that have already been seriously fragmented in a posttruth society. Rumors can indeed be malicious, but the understanding of their circulation has to be more nuanced, as cautioned in the article. One of the key ideas this article puts forward is to situate the circulation and remedy of misinformation in intergenerationally different experiences, values, and aspirations. This conceptual move broadens the terms and frames available for understanding misinformation and sheds light on the "response-ability" (Haraway 2016) that Cofacts's participants tread carefully on judging and claiming truth. The neutral position being taken by the participants cannot be satisfactorily understood as either complying with best practices or simply accepting all statements as having equal validity. This would fail to recognize where the politics of knowledge plays out and what Cofacts's participants endeavor to achieve. The neutral position is a strategic and political act designated for the "deconstruction" of a singular viewpoint held by elder generations at home and in the public, subverting its dominance in both domains but looking for "passionate construction, webbed connections, and hope for transformation of systems of knowledge and ways of seeing" (Haraway 1988:585, cited in the paper) to be shared between different generations and between diverse genders, ethnicities, or classes as Taiwanese families and society move forward.

The research underpinning the article resonates well with the recent development of digital ethnography and the call for attention to digital materiality, as well as emphasizing the importance of ethnography of digital and data infrastructure (Bowker and Star 1999; Dourish 2017; Pink, Ardèvol, and Lanzeni 2016; Pink et al. 2016; Plantin 2019). Through her detailed ethnographic account, we are able to see how a database of rumors and fact-checked information has been set up; what kinds of practices have been instrumental in maintaining such a technological system; how standards and protocols have been appropriated, negotiated, and maintained; and, most importantly, what kinds of physical and affective labor have been performed for such a system to commence and continue its operation. The end result of the chatbot might capture public fascination, but what has been key to Cofacts and captured by the ethnographic work are the complex interactions, informing one another when taking place simultaneously online and offline, inside and outside databases, in the family and the public, and in the material and affective registers.

Through Cofacts, the article also provides brief but useful insights into civic hacking in Taiwan. For instance, g0v is a civic tech initiative that has been in operation for more than a decade and has continuously improved the ways they operate. Hackathons in the context of g0v are not intense and commercially oriented competitions but are one-day meetups occurring every two months, with smaller ones organized separately by individual projects. As Lee (2020, 2022) elaborates elsewhere, g0v has observed and sought to address wide-ranging ethical and political issues, including the organization of a community without a centralized source of power, the translation of openness into technical and ethical domains, the opportunities of political participation opened up by the initiative, and the challenges that also arise.

Cofacts, or g0v for that matter, might be peculiar, but Taiwan's being at the forefront of information warfare deserves global attention, academic and public alike. The precarity of facts during the COVID-19 pandemic now extends into the last stages of the 2024 presidential election. The violence arising from contesting truth claims and paternalistic care and the damage to social cohesion, inclusion, and democratic processes have left traces of rumors' ruination. It might be unrealistic or even dangerous to hope for an end to misinformation and information warfare because it might resort to strategies of conquest (Tsing 2012). Entangling social, digital, material, and affective practices in the making and circulation of information sources can be an alternative. But can there be more? How might it emerge? Lee's article is also an invitation to notice, speculate, and invent future possibilities for surviving well when fabricated and AI-generated "facts" abound.

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WhatsApp Aunties

"Family groups exploded in, I don't know, about eight years. Every family has its own group. My family has its own group,

and even my great-aunts used WhatsApp. They had never used the Internet before and so that's what it became." Maria Carolina Santos is a journalist in the Brazilian city of Recife. She gave a slight shake of her curly, dark-haired head. "You'd see that funny video, those little comedy bits that come in. And the 'good morning,' there were those good mornings, the stickers, and so on. And from the same people, health information, or rather fake health news. Which there is a lot of—a tea for arthritis, 'if you drink this comfrey juice with orange every day, you won't get diabetes.'" Maria Carolina went on, "Then you start to receive things that are more ideological, right? The person who offered these green juice recipes also started sending these ideological things and the person already recognized it because it was what they had been reading for years."

Maria Carolina wrote an impassioned accounting of her profession's sins some years back, in between the first and second round of the 2018 elections that had put reactionary right-wing candidate Jair Bolsonaro in the presidency. Her rebuke of journalism and its failure to adapt to a new information environment went viral among my Facebook contacts at the time. When I tracked her down for an interview in April 2023, I asked how she had seen what was happening so clearly. She shrugged and smiled. "I love WhatsApp groups. I love to just see, to follow along, you know, not to talk. But I saw, for example, how I was left in the dust during the election of '18, like a lot of people were. Because there were so many lies. And you could see that journalism was completely lost. A lot of money, a lot of foundation money was for fact-checking projects, which I hate. I think it's antijournalism. Journalism has to be at the fore. Journalists have to go after the facts. Today, you have to establish a bond of trust to give the news. This fact-checking journalism arrives afterwards, it's debunking (*desmentindo*) things. Who likes someone who just debunks? Nobody likes the one who is debunking. Nobody!"

I remembered our conversation as I read Mei-chun Lee's "Checking Facts by a Bot: Crowdsourced Facts and Intergenerational Care in Posttruth Taiwan." As Lee so neatly puts it, "Social media has become one of the main sources of information and a new political battleground." On Taiwan's LINE, as in WhatsApp in Brazil and elsewhere, an older generation of relatives is especially implicated in mis- and disinformation transmission. If the "WhatsApp aunties" (*tias do Zap*) and uncles are particularly active players in encrypted messaging networks, they are also particularly vulnerable. Cofacts, the crowd-sourced fact-checking service that Lee explores, is a response to this situation in Taiwan, one that is sensitive to the digital divide between generations and the cultural norms of their interactions.

There have not been many anthropological accounts of fact-checking, and this is one of the contributions of Lee's article. She provides the kind of tangible nuance about why Cofacts was developed and how it works that can come only from fieldwork. One could read online that it is a service that combines a chatbot and a database of responses researched and written up by volunteers. But we come to understand that, like with Maria Carolina's great-aunts, the messaging app *is* the Internet for many Taiwanese elders, and they really do not know how to google. And we learn that a kind of care and filial piety led to the invention of this approach, so that instead of confrontational correction of the rumors and scams posted to LINE, nieces and nephews, sons and daughters can use Cofacts. "I don't need to say they're wrong," Lee's interlocutor explains, "I only need to forward what the bot says."

The downsides of what Cofacts cofounder Johnson Liang calls the "free market of speech" perhaps loom larger for me than in this account. Alt-science, a name that intentionally echoes "alt-right" (Casarões and Magalhães 2021), is a much gloomier representation of citizen action. People who supported the use of ivermectin and hydroxychloroquine for COVID-19 long after studies failed to find benefit also claimed the mantle of science, pointing to misleading studies and personal anecdotes. To be fair, this included doctors; they, as much as the layfolk who were sucked in, took up a science with its own sort of standards, an *I*-pistemology in which their senses and personal experience replaced knowledge coming from official institutions and experts (van Zoonen 2012). The medications' purported benefits fatally dissuaded and delayed people getting to the hospital and convinced others that they could protect themselves without a vaccine.

Yet the very real flaws of popular knowledge making have to coexist alongside the reality that, as Cofacts editor "Butterfly" says, "This is no longer an era where truth is confirmed by a single authority." Another contribution of Lee's article is to insist that Cofacts instantiates both a posttruth loss of certainty and an embodied "political and epistemological reconfiguration." As a Wikipedia of rumors, Cofacts emerges from and contributes to this new reality. Lee suggests that the kind of crowdsourced fact-checking done by Cofacts accepts the "indecisive, easily changing, and vulnerable condition of facts . . . to provide an alternative way to reconstruct facts without resorting to authorities." I might argue that they are still resorting to authoritative knowledge, albeit black boxed and presented as a choice (users get to up- or downvote the response options that the chatbot retrieves for them), but regardless, the ramifications are far-reaching. Cofacts is clever on a practical level. The one thing all of these furiously forwarding relatives know how to do is send you a message, so making forwarding the mechanism of accessing the database is ingenious. But what strikes me as transformative about the tack taken by Cofacts is that it works on an ethical level. "By training its users to think critically and actively contribute, Cofacts makes fact-checking not just about producing another piece of content in a sea of rumors but a collaborative practice to combat rumors."

Using the service as much as editing for it is a mode of subjectivation (*assujetissment*), inviting or inciting people "to recognize their moral obligations" (Foucault 1997:264). For better or worse, they shape themselves as they read options, assess claims, and choose the one they want.

Reply

I am grateful to the commentators for engaging with my work with such generosity and for opening up further conversations in regard to mis/disinformation, fact-checking, polarized societies, and digital care. Their wide range of expertise and regions of focus have indeed expanded my work and called our attention to the shared challenge that people around the world face—rampant rumors and lies in a chaotic information environment that rupture the society. As I am writing this reply, Taiwan just completed its legislative and presidential elections in mid-January 2024. Not surprisingly, rumors about election fraud persisted from preelection to postelection and caused much turmoil. Since Taiwan's 2018 midterm elections mentioned in my article, six years have passed, and the technology of producing and spreading mis/disinformation has become increasingly sophisticated. It has evolved from text-based rumors to short videos and AI-generated content, and the platforms for dissemination have become more diverse and decentralized, making debunkers even more hard-pressed. This year, 2024, is poised to be a year full of elections, with more than 60 countries, representing more than half of the global population, casting their votes. It can be anticipated that the mis/disinformation will continue to wield its influence to varying degrees across the globe, and fact-checking is still one of our limited weapons to resist this worrisome situation, although it is in no way to catch up with the speed of its enemy.

That being said, I value all fact-checking efforts, whether they are conducted by professionals or through crowdsourcing. However, as highlighted in my article, my focus lies more on how fact-checking addresses people's affective needs rather than on the truth claims they make. As Chao Chen Lin reminds us in her comment, "People are more willing to trust information that appeals to their emotions and personal beliefs than to seek out facts and objective information." The idea that facts should be objective and independent of human influence overlooks the reality that facts are communicated and negotiated within relations. Facts carry weight. They can sway opinions and actions. As Letícia Cesarino's citation of Brian Massumi suggests, facts are inherently affective. The definition of "post-truth" in the *Oxford English Dictionary*—"relating to circumstances where objective facts have less influence on public opinion than appeals to emotion and personal belief"—also emphasizes its affective nature. In an era where emotions can be programmed and beliefs easily influence cognition, truth cannot be discerned solely through debate. This is where, I argue, that care, as an affective intervention, should come into play.

I fully agree with Dominic Boyer's observation that "we probably do not talk about digital care as much as we need to." The current mainstream discourse on mis/disinformation largely focuses on blaming malicious disseminators of false information, whether individuals or nations, and criticizing platform companies for developing algorithms that undermine public discourse for their own profit-driven motives. While these are crucial discussions, I am more motivated by the question of what proactive and constructive approaches we, as an ordinary citizen, can take to live with, instead of conquer, posttruth. Cofacts opens a window for me, showing me how civic technologies can inspire active and responsible citizenship to address the challenge of intergenerational conflicts with digital care. Through the discussion of Cofacts, my underlying inquiry is how we can "care" for (rather than "cure" as discussed in Mol 2008) our fragmented society and devise ways to reconnect with one another amid the carelessness and cruelty of neoliberal economization, as highlighted by Boyer.

Digital care is not simply a human act. I want to emphasize that the key to Cofacts's digital care is crowdsourcing. I like how Andrew Graan calls it "a different kind of discursive infrastructure" in his comment. This discursive infrastructure—crowdsourcing—has two significant implications here. First, crowdsourced fact-checking emphasizes the plurality of facts and partial objectivity and rejects authoritative narratives. It does not attempt to "police public spheres" (in Graan's term) but aspires to open up public debate. Sung-Yueh Perng's comment nicely summarizes my point, taking it to a deeper level: "The violence arising from contesting truth claims and paternalistic care and the damage to social cohesion, inclusion, and democratic processes have left traces of rumors' ruination. It might be unrealistic or even dangerous to hope for an end to misinformation and information warfare because it might resort to strategies of conquest (Tsing 2012)."

Second, crowdsourcing emerges from the amalgamation of human and machine, a posthuman assemblage. In my other article on g0v's data activism titled "Assembling Civic Technologies: Hackers, Netizens, and Data Activism" (Lee 2022), I describe how crowdsourcing is an assemblage of humans, machines, codes, and data that converge into a political movement. I argue that "machines are neither extensions of the human body, nor has the human body been mechanized. Humans and non-humans, being assembled through transcription devices, form a fluid, mobile, and dissolvable entity. Only when both humans and machines are actively engaged can this digital movement occur" (146, translated by the author). While this passage describes another crowdsourcing project, it is equally applicable to Cofacts. This posthuman assemblage inherently opposes established authority, embracing openness and dissent. I am grateful to commentators for noticing this in Cofacts. Cesarino points out, "No longer reliant on authoritative forms of fact production prevalent in the Fordist era, experimental facts reflect how new cybernetic media are rearranging epistemology in ways that blur established forms of boundary making between fact and fiction, objectivity and subjectivity, human and nonhuman agency." Perng also highlights that "the end result of the chatbot might capture public fascination, but what has been key to Cofacts and captured by the ethnographic work are the complex interactions, informing one another when taking place simultaneously online and offline, inside and outside databases, in the family and the public, and in the material and affective registers."

Despite the potential for digital care inherent in this posthuman assemblage, there are complexities in its implementation. As I argue in the article, by delegating the task of delivering fact-checking results to the "inhuman" chatbot, *yàn shìdài* ("the weary generation") can avoid confronting their parents in the midst of hotly debated elections, thereby softening intergenerational conversations rather than outright rejecting them. Using the chatbot may spare yàn shìdài from directly confronting their parents, but this does not mean that the one being corrected will happily accept it. Meg Stalcup's Brazilian friend Maria Carolina is right: "Who likes someone who just debunks? Nobody likes the one who is debunking. Nobody!" Cesarino has a similar comment and asks an important question about "how baby boomers respond to being fact-checked by bots and, conversely, how their children and grandchildren react in those instances where such stratagem fails."

Certainly, nobody enjoys being corrected or fact-checked. Even if the fact-checking responses are delivered by the chatbot with care, recipients may still feel offended. As Michelle Murphy reminds us, care is not always enjoyable and desirable; it often entails "work of discomfort, unease, and trouble" (Murphy 2015:721). To avoid making the corrected individual feel uncomfortable, Cofacts is designed such that users must actively forward a rumor to the chatbot to receive a fact-checked response, and they have the discretion to decide whether to share these responses with the original group where the rumor originated. Correcting rumors is an art of communication—the timing of replies, tone, and choice of words all influence the recipient's perception. While Cofacts serves as a platform for care, the manner in which this care is delivered ultimately depends on each individual user.

It is worth noting that, as Cofacts is open-source, its code and database are freely available for anyone to use. An engineer has used Cofacts's database to build another chatbot called Auntie Meiyu. LINE users can add Auntie Meiyu as a member to their group. When Auntie Meiyu finds a member sending a message with incorrect information, she will proactively intervene to correct it. While the design of Auntie Meiyu makes fact-checking effortless, it has faced backlash. People feel that their conversations are being monitored. Also, the real-time and rigid corrections from Auntie Meiyu have made many people feel uncomfortable. I once asked the founder of Cofacts if they would build something similar to Auntie Meiyu, and they firmly said no. They do not want to see machine responses completely replacing human communication.

Nevertheless, some seniors initially distrusted Cofacts's chatbot because of negative portrayal by a mainstream media outlet during the 2018 elections, which labeled it as a political tool for a specific party. However, with the outbreak of the COVID-19 pandemic in 2020, the demand for fact-checking surged. Since health-related rumors are less politically charged compared with election-related ones, Cofacts regained trust among seniors. Recently, as Taiwan faces persistent threats from China's information operations, the public has become increasingly vigilant against mis/disinformation. Many civil society groups are engaged in community outreach to promote media literacy. In these initiatives, young instructors provide hands-on guidance to seniors in using various fact-checking tools, including Cofacts. In my subsequent research, I participated in these courses and witnessed the transformation of the elderly from passive recipients of fact-checking results to active users of fact-checking chatbots. While the individuals I observed may not represent the entire baby boomer generation, their evolving trust in fact-checking tools suggests a broader trend among seniors in Taiwan.

In the comment, Cesarino poses another important question that has been on my mind as well: "Are all crowdsourcing processes the same? To what extent is the assumption of a 'wisdom of the crowd' more than industry public relations? When is the wisdom of the crowd indeed wise, swarm intelligence indeed intelligent? Could they be, on the contrary, dysfunctional or even destructive?" She uses the example of Jair Bolsonaro's aspirational fascism and asks, "What sets Cofacts's chatbot apart as a democratic form of crowdsourcing rather than a fascist one?"

Cesarino's questions point out the dual nature of digital technology—the crowd participation it fosters can be either democratic or populist. I believe that the key to making Cofacts democratic rather than populist lies in the fact-checking process itself. This demanding task requires significant time investment and prioritizes logical thinking to counter narratives based on emotion and belief, attracting individuals with keen discernment rather than impassioned crowds. Other commentators also offer insightful perspectives on this issue. Lin reminds us that "all of the outcomes of fact-checking are actually fact-checked greatly by the public." Meg also notes that "using the service as much as editing for it is a mode of subjectivation (*assujetissment*), inviting or inciting people 'to recognize their moral obligations' (Foucault 1997:264). For better or worse, they shape themselves as they read options, assess claims, and choose the one they want." Additionally, Perng quoted Haraway's "response-ability" to describe the ethical responsibility borne by participants amid the uncertainty and crisis-laden landscape of posttruth. These insights collectively underscore that Cofacts's crowdsourcing transcends mere passionate activism, embodying a conscientious effort by citizens to meticulously verify facts and curate responses deemed most suitable for their society.

I am sincerely grateful to Dominic Boyer, Letícia Cesarino, Andrew Graan, Chao Chen Lin, Sung-Yueh Perng, and Meg Stalcup for their invaluable comments, thought-provoking questions, and stimulating discussions. This exchange has allowed me to refine my arguments and enrich my understanding with additional field materials gathered since the writing of this article. Today, the issues of posttruth and mis/disinformation are not only pertinent but also pressing. It is my hope that through my article and our subsequent dialogue, we

can contribute anthropological insights to these critical matters and foster further conversations on the subject.

—Mei-chun Lee

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