DEEPER DOWN THE RABBIT HOLE: HOW TECHNOLOGY CONSPIRACY BELIEFS EMERGE AND FOSTER A CONSPIRACY MINDSET

WEB APPENDIX

Web Appendix A: Initial Survey on the Diffusion of Technology Conspiracy Theories

A.1 Motivation, procedure, and description of the survey

This initial survey has two main goals. Our initial search identified anecdotal evidence for the diffusion of technology conspiracy theories. However, we wanted to confirm that such theories are not limited to a few specific technologies but rather that a wider range of technologies may be susceptible to being the subject of conspiracy theories. We therefore aimed to create a list of technology-centered conspiracy theories encompassing various types of technology. Moreover, we aimed to assess the prevalence of technology conspiracy beliefs. While prior studies on conspiracy theories already reveal the pervasiveness of non-technology-focused beliefs (e.g., 94% of U.S. Americans have heard of and 24% agree with the Birther conspiracy theory; Oliver and Wood 2014), we wanted to confirm that conspiracy theories about technologies are also common among the general public.

Identification of Technology Conspiracy Theories

To identify conspiracy theories pertaining to different technologies, we crawled the web forum *abovetopsecret.com*. The forum claims to be "[…] the Internet's largest […] discussion board community dedicated to the intelligent exchange of ideas and debate on a wide range of "alternative topics" such as conspiracies, UFOs, paranormal, secret societies, political scandals, new world order, terrorism […] (AboveTopSecret.com 2023)." Of the around eight million website visitors per month, around three-fourths are from the U.S. (Semrush 2023). After we had identified ten different technologies with corresponding conspiratorial narratives (see Web Appendix A.2), we stopped our coding procedure.

Diffusion of Technology Conspiracy Theories

We analyzed the diffusion of these specific technology conspiracy theories, assessing both awareness and belief among the population. Therefore, we developed a survey instrument that included ten technologies and related conspiratorial narratives. Following other research on the diffusion of conspiracy theories (Oliver and Wood 2014), participants were asked whether they had heard of the narrative. They then rated statements regarding their agreement on a 5-point Likert scale (strongly disagree to strongly agree). The survey instrument also included attention and plausibility checks. As our list comprises technology conspiracy theories that are specific to the U.S. (e.g., IRS e-File technology), we decided to collect data from the U.S. population.

We used Prolific Academic (Peer et al. 2017) and the representative sample service, which provides the opportunity to collect a data set that aims to be representative in terms of age (i.e., ≥ 18+ years), gender (i.e., male vs. female), and ethnicity (i.e., White, Mixed, Asian, Black, and Other) according to the U.S. Census Bureau population group estimates (U.S. Census Bureau 2015). Data was collected in December 2022, and we received a sample of 1,100 U.S. citizens. After data cleaning, the sample comprises 1,007 valid answers. Descriptives for this sample are depicted in the following table.

Age	**Percentage**	**Gender**	**Percentage**
18 – 29 years	2.3 % (21.5 %)	Male	48.6 % (49.2 %)
30 – 39 years	18.7 % (16.9 %)	Female	51.4 % (50.8 %)
40 – 49 years	16.6 % (16.7 %)	**Ethnicity**	
50 – 59 years	18.3 % (18.0 %)	White	78.3 % (73.1 %)
≥ 60 years	26.2 % (26.8 %)	Mixed	2.1 % (3.1 %)
		Asian	6.1 % (5.4 %)
		Black	12.0 % (12.7 %)
		Other	1.6 % (5.8 %)

Note. Numbers in brackets display the targeted U.S. census 2015 values

The final results, as presented in Web Appendix A.2, indicate that U.S. citizens have both a high level of awareness of technology conspiracy theories and also exhibit high levels of belief in them. For example, two-thirds of respondents in our sample had heard of the Amazon Echo statement, and more than one-third hold this statement to be true (i.e., they either agree or strongly agree). We also find evidence that awareness and belief are not necessarily positively correlated. For example, we find that 82 % of participants had heard about manipulated electric voting machines, but only 11 % agreed with this narrative. In turn, only 15 % had heard about hidden backdoors in IRS e-File tax software, but 9 % hold this to be true. We interpret this as evidence that some technology conspiracy theories are more believable than others. Overall, the results provide clear evidence for the pervasiveness of technology conspiracy beliefs in the U.S. population.

A.2 Results of the survey on the diffusion of technology conspiracy beliefs in the U.S.

Technology and Conspiratorial Narrative Statement	Heard Before?	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Amazon Echo. Amazon uses its Echo devices to secretly access and capture microphone data (also when the device is not active) to manipulate the U.S. population for commercial and political interest.	67%	14%	26%	23%	28%	8%
Apple iPhone. Powerful groups utilize iPhone technologies (e.g., microwave emitters) to read and control the minds of their users.	17%	60%	27%	9%	2%	1%
Bitcoin. Behind the Bitcoin technology lies a secret plan of the Chinese government to manipulate the world economy.	18%	36%	34%	23%	6%	1%
Electric Voting Machines. In recent U.S. elections, hidden powers secretly manipulated electronic voting machines to rig elections.	82%	41%	25%	16%	12%	7%
Facebook Messenger. The Facebook messenger app provides the FBI access to private message content without any legal obligation (e.g., critical comments about the 2020 U.S. election).	39%	15%	25%	28%	25%	8%
Google Search Engine. Google deliberatively manipulates its search engine to favor anti-conservative search results in an effort to support the political left.	50%	25%	30%	21%	15%	10%
IRS e-File. Using commercial tax software and hidden backdoors, the IRS illegally collects information on taxpayers to defraud them.	11%	35%	35%	22%	7%	2%
Microsoft Windows. Microsoft Windows includes hidden backdoors (e.g., NSAKEY) from certain U.S. government agencies to provide widespread access to devices of U.S. citizens.	25%	21%	29%	29%	18%	3%
U.S. Tracing Apps. Official COVID-19 tracing apps include hidden backdoors to provide government agencies far-reaching access to the smartphone (e.g., secretly access Bluetooth).	32%	29%	33%	22%	13%	3%
Wikipedia. Pharmaceutical companies systematically manipulate Wikipedia articles to hide the severe consequences of medical treatments (e.g., vaccination) and increase their profits.	15%	22%	29%	27%	17%	5%

Note. N = 1,007

Web Appendix B: Literature Review

B.1 Procedure of literature review and exemplary measurements of specific and generic conspiracy beliefs

Literature stream	Conspiracy beliefs		Conspiracy mindset
Search strings	"Conspiracy belief(s)," "belief in conspiracy" in title or keywords		"Conspiracy mindset(s)," "conspiracy mentality/mentalities," "conspiracy ideation(s)" in title or keywords
Search engines/ databases	EBSCOHost, Web of Science, ScienceDirect		
Date	Articles published by March 2023		
Sources	Peer-reviewed journals with impact factor[1] > 1		
Number of articles (after removal of duplicates)	373		46
Categorization[2]	Articles on specific conspiracy beliefs	Articles on non-specific conspiracy beliefs[3]	
	122	251	

Notes. [1] Clarivate JCR impact factor; [2] Categorization based on whether articles elaborate on specific conspiracy beliefs or employ scales measuring the belief in specific conspiracy theories; [3] Many of these articles also do not elaborate on or analyze generic conspiracy beliefs but topic- or context-oriented conspiracy beliefs (e.g., to which extent individuals endorse a collection of diverse COVID-19-related conspiracy theories)

Focus	Approach	Exemplary scale
Specific conspiracy beliefs	Measurement of belief in specific conspiracy theory	Marchlewska et al. (2018): (1) "The EU hides the real reasons for bringing refugees into Poland." (2) "The EU offers help to the refugees selflessly." (reverse coded) (3) "The EU spreads the world about refugees' situation to divert the world's attention from the EU's real plans." (4) "The EU brings refugees to Poland to destroy Polish culture." (5) "The EU secretly plans to take power over the Polish economy." (6) "The EU's plan to help refugees, that they present to Poland, is authentic." (reverse coded).
General conspiracy beliefs	Aggregated measurement of beliefs in different conspiracy theories (event-based measure)[1]	Leman & Cinnirella (2007): (1) "There was a conspiracy behind the assassination of U.S. President John F Kennedy." (2) "The European Union is trying to take control of the United Kingdom." (3) "Princess Diana's death was not accidental but was a case of murder." (4) "Governments are suppressing evidence of the existence of aliens." (5) "The AIDS virus was created in a laboratory." (6) "The government covers up the existence of toxins in the food supply."
	Measurement of the belief that the environment is shaped by conspiracies (generic conspiracist beliefs)[2]	Imhoff & Bruder (2014) (1) "There are secret organizations that have great influence on political decisions." (2) "Most people do not recognize to what extent our life is determined by conspiracies that are concocted in secret." (3) "Most people do not see how much our lives are determined by plots hatched in secret." (4) "There are certain political circles with secret agendas that are very influential." (5) "A few powerful groups of people determine the destiny of millions." (6) "Politicians and other leaders are nothing but the string puppets of powers operating in the background."

Notes. [1] Aggregated levels of agreement to statements indicate general beliefs in conspiracy theories; [2] Conspiracy mindset is mostly measured with these types of scales.

B.2 Categorization of correlates of specific conspiracy beliefs and conspiracy mindset, and exemplary empirical findings

	Specific Conspiracy Beliefs	**Conspiracy Mindset**
(1) Personal characteristics		
Demographics	**Age** (Łowicki et al. 2022) **Gender** (Cassese et al. 2020) **Education** (Van Prooijen 2017)	**Age** (Frenken and Imhoff 2022) **Gender** (Imhoff et al. 2022) **Education** (Imhoff et al. 2022)
Personality traits	**Need for cognitive closure** (Marchlewska et al. 2018) Intuitive thinking (Tomljenovic et al. 2020) Agreeableness (Bowes et al. 2021)	**Need for cognitive closure** (Szebeni et al. 2021) Rational thinking style (Stojanov and Halberstadt 2019) Openness to experience (Swami et al. 2011)
Attitudes and beliefs	**Conspiracy mindset** (Stojanov and Halberstadt 2019, Swami et al. 2011) **Political extremism** (Van Prooijen et al. 2015) Anti-establishment beliefs (Enders et al. 2022)	Right-wing-authoritarianism (Bruder et al. 2013, Dyrendal et al. 2021) Spirituality (Petrović et al. 2019) **Conspiracy beliefs** (Granadas Samayoa et al. 2022)
Abilities and behavior	Scientific literacy (Pavić and Šuljok 2022) Digital health literacy (Pisl et al. 2021) Use of social media for news (Allington et al. 2021, Enders et al. 2021)	Functional literacy (Stojanov and Hannawa 2023)
(2) Social characteristics	**Social influence** (Cookson et al. 2021) Group-based deprivation (Van Prooijen et al. 2018) Exposure to conspiracy theories (Swami et al. 2011)	Social validation (Stojanov and Hannawa 2023) Lack of close friendships (Barron et al. 2014) Social exclusion (Schnepf et al. 2021)
(3) Situational and contextual factors	**Powerlessness** (Abalakina-Paap et al. 1999) Situational lack of control (Šrol et al. 2021, Van Prooijen and Acker 2015) **Contextual anxiety / threat** (Grzesiak-Feldman 2013, Marchlewska et al. 2022)	**Powerlessness** (Bruder et al. 2013) Perceived socio-political control (Bruder et al. 2013)
(4) Elements of the conspiracy theory		
Subject	**Power** (Imhoff and Bruder 2014) Perceived Morality (Van Prooijen and Jostmann 2013) Trust (Van Prooijen and Acker 2015)	*not applicable*
Object	**Perceived risks** (Biddlestone et al. 2022, Šrol et al. 2021) Word-of-mouth (on object) (Kraemer et al. 2023) Perceived consequence size (Van Prooijen and Van Dijk 2014)	*not applicable*
Purpose	---	*not applicable*

Note. Correlates displayed bold were considered in one or both of our main studies.

B.3 Categorization of examined specific conspiracy beliefs according to object of conspiracy

Viruses, Pharmaceuticals, Drugs, and Chemicals	*140*
COVID origin and spread	43
HIV/AIDS origin/ purpose (e.g., bioweapon, medical experiments)	31
COVID vaccines	26
Vaccines evil purpose/ dangers concealed	18
Drugs against minorities	5
Birth Control dangers / evil purpose	3
Others (e.g., big pharmaceutical companies create diseases, chemtrails)	14
Misinformation	*82*
COVID coverage (deliberate exaggeration of dangers)	14
Climate change / global warming hoax	13
Alien Contact & UFO	12
Birther (Obama is not a U.S. citizen)	9
COVID hoax (i.e., COVID does not exist)	5
Holocaust never happened/ exaggerated	5
Genetically Modified Crops Dangers Concealed	5
Moon Landings Faked	3
Political Actions, Electoral Fraud, & Wars	*71*
Jewish Groups (e.g., Rothschilds) control politics and economy	10
Deep State	8
Rigged Elections	8
Trump Russia Collusion	8
COVID politics (e.g., hoarding of ventilators)	6
Clinton Russia Collusion	3
Replacement through Immigrants	3
Assassinations, terror attacks, and other crimes	*52*
911 terror attacks	10
School shootings (false flag operations)	7
John F. Kennedy assassination	6
Jeffrey Epstein assassination	5
Martin Luther King assassination	4
7/7 terror attacks	3
Others (e.g., Salisbury poisoning, Las Vegas shooting)	17
Economic acts	*13*
Global elite ("one percent") rigs economy	6
Japan conspires against U.S. economy	2
Financial Crisis created	2
Others (e.g., "New Coke" publicity stunt, fictional scandal)	3
Technology (in a broad sense)	*16*
5G	8
Fictional data donation app*	1
Fluorescent light bulbs to control the population	3
TV broadcast mind control*	3
Y2K	1
Disasters	*3*
Hurricane Katrina	2
Fictional disaster	1
Others	*2*
Reptilians rule the world	1
Da Vinci Code	1

Notes. The analysis involves 122 articles, with many articles examining multiple conspiracy beliefs;
* IT artifacts as defined in the context of technology conspiracy beliefs

B.4 Summary of articles exploring (specific) technology conspiracy beliefs

Article	Journal	Focus	Overarching Gaps
Uscinski et al. (2022)	Scientific Reports	The authors explore how psychological and political constructs correlate with a wide variety of conspiracy beliefs, which involve one conspiracy theory related to technology. This conspiracy theory claims that television broadcasts are used to mind-control people.	- The studies do not theorize on conspiracy beliefs related to technology. - The studies do not explore how perceptions of technology characteristics influence the belief in the conspiracy theory. - The studies do not explore how perceptions of the technology's issuer influence the belief in the conspiracy theory. - The studies do not elaborate on how technology conspiracy beliefs relate to a broader conspiracy mindset.
Uscinski, Enders, Klofstad, et al., (2022)	PLoS One	The authors explore whether the population's belief in conspiracy theories varies over time. One of the examined conspiracy theories claims that television broadcasts are used to mind-control people.	
Enders et al. (2023)	Political Behavior	The authors examine whether one's political orientation affects the belief in different conspiracy theories. One of the examined conspiracy theories claims that television broadcasts are used to mind-control people.	
Kraemer et al. (2023)	Journal of Product Innovation Management	The authors explore conspiracy beliefs related to a fictitious data donation app, showing that word-of-mouth by peers and experts affects conspiracy beliefs on the app and that these effects depend on the level of the conspiracy mindset.[1]	

Note. [1] In addition to examining specific conspiracy beliefs associated with a data donation app in one empirical study, Kraemer et al. (2023) also explore conspiracy beliefs in the context of a COVID-19 tracing app in another study. However, in the latter investigation, they measure generic conspiracy beliefs that are not specifically linked to technology. As a result, only the study focused on the data donation app is described.

B.5 Related IS research concepts

We reviewed the premier IS journals to identify concepts that share similarities with technology conspiracy beliefs. The goal of this review was to lay out the differences between technology conspiracy beliefs and related concepts. We focused on concepts that, like technology conspiracy beliefs, relate to information and beliefs that are not backed by credible evidence. We identified misinformation, disinformation, fake news, and rumors as phenomena with conceptual similarities to technology conspiracy beliefs (or underlying technology conspiracy theories). As we are interested in IS phenomena addressing those topics, our search was limited to the Senior Scholars' List of Premier Journals. The condensed results are presented in the following table.

Concept	Definition	Similarities and differences to technology conspiracy beliefs
Misinformation	The dissemination of factually false information without the intent to deceive (Khan et al. 2022)	*Similarities to technology conspiracy beliefs:* - Propagate unfounded narratives - Can pose significant threats *Diverging characteristics of technology conspiracy beliefs:* - Consists of particular elements: subjects (conspirators / issuers), objects (IT artifact) - IT artifact at the center of the phenomenon (rather than medium for the spread of misinformation)
Disinformation	The dissemination of factually false information with the intention to deceive others (Khan et al. 2022)	*Similarities to technology conspiracy beliefs:* - Propagate unfounded narratives - Can pose significant threats *Diverging characteristics of technology conspiracy beliefs:* - Consists of particular elements: subjects (conspirators / issuers), objects (IT artifact) - IT artifact at the center of the phenomenon (rather than medium for the spread of disinformation)
Fake news	A particular kind of disinformation "that mimics news media content […]" (Lazer et al. 2018, p. 1094)	*Similarities to technology conspiracy beliefs:* - Propagate unfounded narratives - Can pose significant threats *Diverging characteristics of technology conspiracy beliefs:* - Consists of particular elements: subjects (conspirators / issuers), objects (IT artifact) - IT artifact at the center of the phenomenon (rather than medium for the spread of fake news)
Rumors	Unverified and potentially important pieces of information that circulate in social groups in uncertain circumstances (Oh et al. 2013, Wang et al. 2018)	*Similarities to technology conspiracy beliefs:* - Propagate unfounded narratives - Community-driven phenomena often in situations of uncertainty and potential threat *Diverging characteristics of technology conspiracy beliefs:* - IT artifact at the center of the phenomenon (rather than medium for the spread of rumors) - More specific as it consists of particular elements: subjects (conspirators / issuers), objects (IT artifact)

Web Appendix C: Conceptual Model

C.1: Sources of threats to psychological needs in the research context

		Threat through	
Need (mechanism)	**Technology Characteristic**	**Issuer Characteristic**	**Extraneous Factor**
Epistemic (to understand the environment)	*Performance Expectancy:* If one questions the advertised benefits of the technology, it creates uncertainty surrounding the technology's functionality. *Effort Expectancy:* If one perceives the technology as difficult to use and understand, it creates uncertainty surrounding the technology's objective.	*Malevolence:* If the issuer appears willing to pursue harmful/evil objectives, it creates ambiguity surrounding the true purpose of the technology. *Power*: If the issuer appears very powerful, it causes ambiguity regarding the issuer's capability to misuse their power.	*Need for Cognitive Closur*e: If individuals aspire to reach definitive conclusions and remove ambiguity, they have an increased drive to understand their environment, making them more susceptible to perceiving threats to their epistemic needs.
Existential (to maintain feelings of security, safety, and situational control)	*Perceived Risks:* If one perceives risks associated with the technology, it reduces perceived security, safety, and situational control.	*Malevolence*: If the issuer appears willing to pursue harmful/evil objectives, it reduces perceived security, safety, and situational control due to the ambiguity surrounding the true purpose of the technology. *Power*: If the issuer appears very powerful, it reduces perceived security, safety, and situational control due to the issuer's potential to misuse their power.	*Contextual Anxiety:* If one experiences anxiety associated with the context of the technology, it reduces perceived security, safety, and situational control.
Social (to maintain feelings of social acceptance and status)	-	-	*Social Influence:* If one expects their social environment to disapprove of a given technology, not acting in line with peers' norms will risk one's social acceptance and status.

Web Appendix D: Additional Information on Study 1

D.1 Study 1: Measurement instruments

Construct	Item	Source
Conspiracy Mindset	There are secret organizations that have great influence on political decisions. Most people do not recognize to what extent our life is determined by conspiracies that are concocted in secret. Most people do not see how much our lives are determined by plots hatched in secret. There are certain political circles with secret agendas that are very influential. A few powerful groups of people determine the destiny of millions. Politicians and other leaders are nothing but the string puppets of powers operating in the background.	Imhoff & Bruder (2014)
Technology Conspiracy Beliefs	The government is trying to cover up the real purpose of the Corona-Warn-App. The government covers up the dangers posed by the Corona-Warn-App. People are deceived about the need for the Corona Warning app. The Corona-Warn-App has a different purpose than the government claims.	Shapiro et al. (2016)
Performance Expectancy	Using the Corona-Warn-App will enable me to effectively avoid adverse health consequences from a Corona infection. (personal-beneficial dimension) Using the Corona-Warn-App will help me to protect myself from the dangers of a Corona infection. (personal-beneficial dimension) Using the Corona-Warn-App will be useful for me to detect a Corona infection early on and to react accordingly. (personal-beneficial dimension) Using the Corona-Warn-App can effectively limit the health consequences from Corona for the population. (societal-beneficial dimension) Using the Corona-Warn-App helps to protect the population from Corona infection. (societal-beneficial dimension) Using the Corona-Warn-App makes a valuable contribution to being able to react quickly when fellow citizens are infected with Corona. (societal-beneficial dimension)	Venkatesh et al. (2003), Trang et al. (2020)
Effort Expectancy	I think learning how to use the app is easy for me. I think my interaction with the app is clear and understandable. I think the app is easy to use. I think it is easy for me to become skillful at using the app.	Venkatesh et al. (2003)
Perceived Risks (Privacy Risks)	Giving the app access to my personal information would involve many unexpected problems. It would be risky to disclose my personal information to the app. Personal information I give to the app could be used inappropriately. There would be high potential for privacy loss associated with giving personal information to this app.	Xu et al. (2009)
Social Influence	People who influence my behavior think that I should use the app. People who are important to me think that I should use the app People who are in my social circle think that I should use the app.	Venkatesh et al. (2012)
Contextual Anxiety (COVID-19 Health Anxiety)	I spend a lot of time worrying about coronavirus infections. I often worry about getting infected with the COVID-19 virus. When I hear about the Coronavirus, I often think that I could have been infected with it. My family/friends would say that I worry too much about a coronavirus infection.	Trang et al. (2020)
Need for Cognitive Closure (Closed Mindedness)	I dislike questions which could be answered in many different ways. I feel irritated when one person disagrees with what everyone else in a group believes. When considering most conflict situations, I see clearly that only one side can be right. I prefer interacting with people whose opinions are very close to my own.	Webster and Kruglanski (1994)
Blue Attitude (marker variable)	I like blue better than other colors. I like the color blue.	Simmering et al. (2015)

Note. All items are measured on 7-point Likert scale.

D.2 Study 1: Panel mortality and sample descriptives

We started our panel with an initial pool of 565 participants. With each new survey wave, we had an attrition between 13.8 % and 21.9 %, resulting in an overall survival rate of 56.1 %.

Wave	# of Participants	Attrition Rate	Total Survival Rate
Panel initialization	565		
t-1	441	21.9 %	78.1 %
t	380	13.8 %	67.3 %
t+1	317	16.6 %	56.1 %

After final data cleaning, we received a final sample of 308 participants. Sample characteristics are depicted in the following table.

Age	Percentage	Gender	Percentage
18 – 19 years	2.9 %	Male	61.8 %
20 – 29 years	28.8 %	Female	38.2 %
30 – 39 years	30.1 %	**Education**	
40 – 49 years	19.0 %	No high school	10.1 %
50 – 59 years	16.0 %	High school or equivalent	40.2 %
≥ 60 years	3.3 %	University or equivalent	49.7 %

D.3 Study 1: Detailed results

	Technology Conspiracy Beliefs (t)				Conspiracy Mindset (t)				Conspiracy Mindset (t+1)			
Independent Variable	**est.**	**std. err.**	**z-value**	**p-value**	**est.**	**std. err.**	**z-value**	**p-value**	**est.**	**std. err.**	**z-value**	**p-value**
Conspiracy Mindset (t−1)	.555	.049	11.302	< .001	.766	.049	15.500	< .001				
Conspiracy Mindset (t)									.623	.132	4.728	< .001
Technology Conspiracy Beliefs (t)									.452	.132	3.429	.001
Technology Characteristics												
Performance Expectancy (t)	-.042	.053	-.792	.291								
Effort Expectancy (t)	-.104	.039	-2.646	.012								
Perceived Risks (t)	.198	.041	4.838	< .001								
Control Variables												
Social Influence (t)	-.037	.049	-.761	.299								
Need for Cognitive Closure (t)	.115	.050	2.318	.027	.036	.045	.804	.289	-.133	.047	-2.829	.007
Contextual Anxiety (t)	.087	.044	2.000	.054	.040	.040	1.000	.242	-.023	.039	-.591	.335
Age (t−1)	-.015	.038	-.400	.368	.018	.030	.600	.333	-.046	.038	-1.200	.194
Gender (t−1)	-.016	.038	-.421	.365	-.032	.039	-.827	.283	-.025	.036	-.700	.312
Education (medium; t−1)	-.035	.068	-.519	.349	-.109	.066	-1.645	.103	.062	.064	.976	.248
Education (high; t−1)	-.114	.067	-1.706	.093	-.108	.066	-1.631	.106	.065	.063	1.025	.236
Model fit												
R^2	.604				.608				.663			
χ^2	1991.247											
χ^2 / df	1.676											
RMSEA	.047											
CFI	.952											
TLI	.947											
SRMR	.060											

D.4 Study 1: Robustness check for the reciprocal effect of technology conspiracy beliefs on changes in the conspiracy mindset

One can argue that our measurement of conspiracy mindset includes, to some extent, a time-invariant component. Recent research suggests that, in such a case, simple autoregressive modeling over time can lead to spurious conclusions in the reciprocal relationships (Hamaker et al. 2015). While we already control trait-like antecedents of conspiracy mindset in our dependent variables, we conducted a further robustness check. More specifically, we reexamined the effect of technology conspiracy beliefs on conspiracy mindset (H10b) and estimated our model, which we specified based on a two-wave bivariate dynamic latent difference score model proposed by Kievit et al. (2018). This allows us to clearly differentiate within-person variance (i.e., change of conspiracy mindset over time) from time-invariant between-person variance in conspiracy mindset. The following table presents the estimation results. The estimation suggests that technology conspiracy beliefs significantly predict the (within-person) change of conspiracy mindset (γ_{tcb} = .475, $p < .001$). This finding is consistent with the prior results.

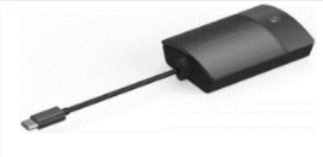
	Δ Conspiracy Mindset$_{t,t+1}$	
	est.	**p-value**
β_{cm}: Conspiracy Mindset (t)	−.765	< .001
γ_{tcb}: Technology Conspiracy Beliefs (t)	.475	< .001
Control Variables		
Contextual Anxiety (t)	−.022	.695
Need for Cognitive Closure (t)	−.140	.034
Age (t-1)	−.093	.081
Gender (t-1)	−.020	.706
Education (middle, t-1)	−.002	.981
Education (high, t-1)	−.050	.585
Model fit		
R^2	.265	
χ^2	81.9	
χ^2 / df	2.435	
CFI	.939	
TLI	.932	
RMSEA	.068	
SRMR	.059	

Web Appendix E: Additional Information on Study 2

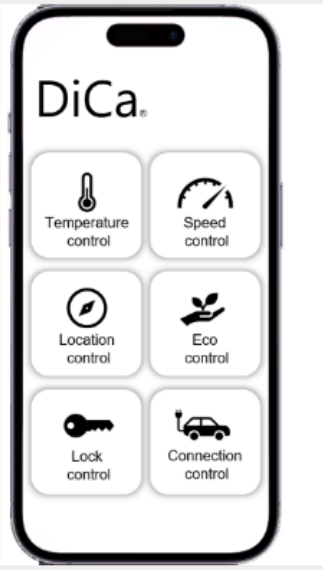
E.1 Study 2: Experimental design and treatment conditions

All participants were introduced to a start-up that announced plans to launch DiCa and received the same initial description of the DiCa technology product (see the following figure). Participants then randomly received one of four articles about DiCa technology (see table below), which contained the experimental treatments for the background of the issuer (i.e., issuer malevolence and issuer power).

DiCa technology - the smart car assistant



DiCa device. Connectable to USB, USB-C, and automobile auxiliary power outlet.



DiCa app. Control your car from everywhere.

For the low price of $19, DiCa is a revolutionary smart car assistant that brings almost any car into the digital world. Simply plug the DiCa device into your car and drive more safely and conveniently. That is not all. You can download extensions for DiCa to unlock additional features and enhance your driving experience even further.

What services are involved?

Emergency system: DiCa automatically warns you of potentially dangerous situations using background car-to-car information exchange and can even put on the brakes to avoid accidents. Moreover, relying on audio analysis, car sensors, and a patented AI system, DiCa automatically alerts emergency services in the case of accidents or if passengers show signs of severe distress.

Full remote car control: While you are driving, DiCa allows you to control most of the core functionalities (e.g., seat heating, windows, navigation system) using a simple voice assistant. You can also use the DiCa app to track the location of your car, remotely lock it, or control the AC.

Safe driving data: DiCa collects data on the driver's driving style. If activated, DiCa analyzes this data and determines a safe driving index. The collected data can then be shared with selected insurance companies, which offer bonuses for safe driving.

How does it work?

DiCa is a patented technical device that can be connected to almost any car using standard interfaces (e.g., USB-A, USB-C, automobile auxiliary power outlet). It seamlessly connects with your existing onboard car technologies (e.g., engine control, multimedia system, door lock system). It enhances these technical capacities with digital networking technologies (e.g., Bluetooth and 5G), a variety of sensors (e.g., gyroscope), and an AI-based control system.

How to get it, and how to use it

DiCa works on more than 80% of vehicles currently registered in the US. It can be purchased through the official DiCa online store and delivered directly to your home address within 1-3 business days.

For the initial setup and depending on the manufacturer and the production date, it may be necessary for the user to make some configurations in the car's operating system by themselves. The user then needs to download an app and follow an installation procedure. This app allows users to access most services using the smartphone app or audio control. As some core features rely on shared data, the more car owners actively use DiCa, the better the services become.

Variable	Level	Manipulation
[Introduction]		
		DiCa steals the show as the new star of smart car technology At the recent North American International Auto Show 2022, an innovative in-car technology called DiCa received some attention. DiCa promises to be the FireTV stick for cars: bringing modern digital capabilities to almost any car on U.S. roads.
[First Manipulation]		
Issuer Power	Low (n = 184)	[...] DiCaTec Inc. was established by a team of college graduates with majors in computer engineering and computer science. The company's financial resources come from the founders' capital and a highly successful crowd-sourcing campaign. This funding enabled the company to develop the DiCa device. During the approval process, it was a major challenge for DicaTec Inc. to overcome bureaucratic hurdles and finally obtain market approval from the National Highway Traffic Safety Administration (NHTSA). In addition to the development and approval of the DiCa device, the company tried to influence legislation, particularly regarding automated driving—however, its voice was not heard by lawmakers. DiCaTec Inc. had difficulties obtaining technical specifications for in-car interfaces from most major automotive manufacturers. Despite this, ultimately, the DiCa device is compatible with almost all car models.
	High (n = 179)	[...] DiCaTec Inc. was established by a group of prominent figures in Silicon Valley, including executives from major tech companies and influential venture capital firms. The company's vast financial resources enabled the company to develop the DiCa device quickly. During the approval process, its significant political influence enabled DiCaTec Inc. to easily overcome bureaucratic hurdles and obtain immediate market approval of the DiCa device by the National Highway Traffic Safety Administration (NHTSA). In addition to the development and approval of the DiCa device, the company tried to influence legislation, particularly regarding automated driving—thereby, the company demonstrated its ability to shape legislation. DiCaTec Inc. had no difficulties obtaining technical specifications for in-car interfaces from most major automotive manufacturers. Ultimately, the DiCa device is compatible with almost all car models.
[Second Manipulation]		
Issuer Malevolence	Low (n = 184)	[...] Consumer protection groups, aided by independent experts, recently conducted a series of investigations into DiCaTec's business practices. One customer protection group highlighted that DiCaTec had established a dedicated support system to address customer inquiries. They are also said to be transparent in their communication with customers, regularly notifying them of any issues with their products. Overall, the investigations commended DiCaTec for its efforts to act in the best interests of customers, employees, and the community.
	High (n = 179)	[...] Consumer protection groups, aided by independent experts, recently conducted a series of investigations into DiCaTec's business practices. One customer protection group highlighted that DiCaTec had a poor track record of responding to customer inquiries. They are also said to lack transparency in their communication with customers, being slow in notifying them of any issues with their products. Overall, the investigations criticized DiCaTec for its lack of effort in acting in the best interest of customers, employees, and the community.
[Outro]		
		[…] DiCa will be officially released in March 2023, so stay tuned for news when DiCa is on the road.

E.2 Study 2: Measurement instruments

Construct	Item	Source
Conspiracy Mindset	There are secret organizations that have great influence on political decisions. Most people do not recognize to what extent our life is determined by conspiracies that are concocted in secret. Most people do not see how much our lives are determined by plots hatched in secret. There are certain political circles with secret agendas that are very influential. A few powerful groups of people determine the destiny of millions. Politicians and other leaders are nothing but the string puppets of powers operating in the background.	Imhoff & Bruder (2014)
Technology Conspiracy Beliefs	DiCaTec Inc. and hidden actors are trying to cover up the real purpose of the DiCa technology. DiCaTec Inc. and hidden actors cover up the dangers posed by the DiCa technology. People are deceived about the need for the DiCa technology. The DiCa technology has a different purpose than DiCaTec Inc. claims.	Shapiro et al. (2016)
Performance Expectancy	I find the DiCa technology useful for my daily life. (personal-beneficial dimension) The DiCa technology is a valuable digital extension that helps me to achieve my goals more effectively. (personal-beneficial dimension) Using the DiCa technology increases the benefits I can get from my car in everyday life. (personal-beneficial dimension) The DiCa technology is useful for society. (societal-beneficial dimension) The DiCa technology is a valuable digital extension that helps to achieve societal goals more effectively. (societal-beneficial dimension) Using the DiCa technology provides benefits for society. (societal-beneficial dimension)	Venkatesh et al. (2003), Trang et al. (2020)
Effort Expectancy	Learning how to set up the DiCa technology is easy for me. My interaction with the DiCa technology is clear and understandable. The initial installation of the dica technology in my car is easy for me. It is easy for me to become skillful at using the DiCa technology.	Venkatesh et al. (2003)
Perceived Risks (Technology Risks)	The access I would give DiCa technology to my car could be used inappropriately. There would be a high risk associated with using DiCa technology. Connecting DiCa technology with my car would involve many unexpected problems. It would be risky to connect my car with the DiCa technology.	Xu et al. (2009)
Issuer Power (manipulation check)	The issuer behind DiCa … … has great power over other people and organizations. … has much influence on other people and organizations. … have a lot of control over its environment.	Imhoff and Bruder (2014)
Issuer Malevolence (manipulation check)	For the most part, the decisions made by DiCaTec Inc. are made out of care and concern for its users, employees, and the community. * Most decision makers at DiCaTec Inc. care about their users, employees, and the community. * DiCaTec Inc. puts aside its own interests in making decisions that are right for its users, employees, and the community. *	Pytlik et al. (2017)
Social Influence	People who influence my behavior think that I should use DiCa technology. People who are important to me think that I should use DiCa technology. People who are in my social circle think that I should use DiCa technology.	Venkatesh et al. (2012)
Contextual Anxiety (Driving Anxiety)	Sometimes, I am afraid of driving When I think of driving, I envision what could happen When I drive, I sometimes experience fear physically, e.g., racing heartbeat, sweating, shaking, chest tightness, muscle tension, etc. I avoid driving. My fear of driving is a burden to me.	Fischer et al. (2021)
Need for Cognition	I would prefer complex to simple problems. I find satisfaction in deliberating hard and for long hours. I prefer my life to be filled with puzzles that I must solve. I generally question thins rather than accepting them as they are.	Epstein (1996)
Powerlessness	My life is chiefly controlled by powerful others. Although I might have good ability, I will not be given leadership responsibility without appealing to those in a position of power. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.	Levenson (1973)
Political Extremism [a]	In terms of political orientation, I am … very left-wing […] very right-wing very progressive […] very conservative	Zwicker et al. (2020)
Blue Attitude (marker variable)	I like blue better than other colors. I like the color blue.	Simmering et al. (2015)

Note. All items (except political extremism) are measured on 7-point Likert scale. * inverted. [a]: political extremism is measured on an 11-point semantic differential, and then, a political extremism index is calculated by taking the absolute value of the midpoint-centered scale.

E.3 Study 2: Data cleaning and sample descriptives

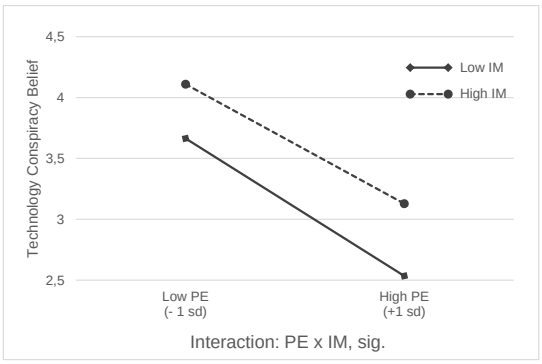
In wave 1, we received a total of 442 participants who finished the survey. After wave 2 and final data cleaning, we received a sample of 363 participants. Sample characteristics are depicted in the following table.

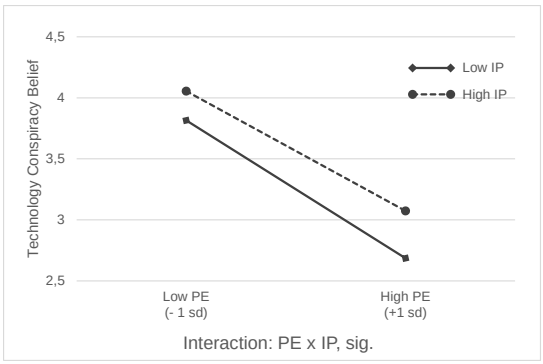
Age	**Percentage**	**Gender**	**Percentage**
18 – 19 years	3.3%	Male	58.5%
20 – 29 years	25.3%	Female	41.5%
30 – 39 years	28.9%	**Education**	
40 – 49 years	20.1%	No high school	3.8%
50 – 59 years	12.9%	High school or equivalent	29.2%
≥ 60 years	9.4%	University or equivalent	66.9%

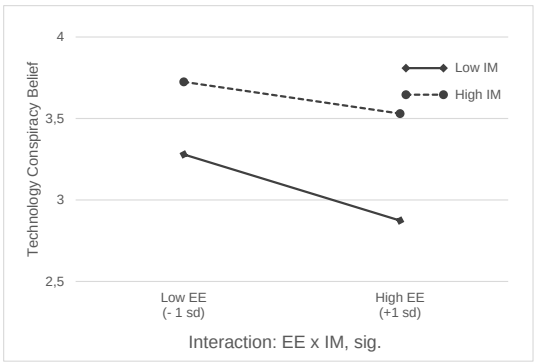
E.4 Study 2: Detailed SEM estimation results and interaction plots

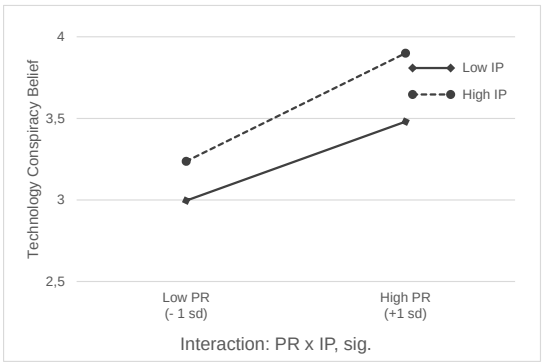
	Technology Conspiracy Beliefs (t)				Conspiracy Mindset (t)			
Independent Variable	**est.**	**std. err.**	**z-value**	**p-value**	**est.**	**std. err.**	**z-value**	**p-value**
Conspiracy Mindset (t−1)	.226	.048	4.641	< .001	.836	.042	19.814	< .001
Technology Conspiracy Beliefs (t)					.197	.031	6.407	< .001
Technology Characteristics								
Performance Expectancy (t)	-.407	.069	-5.899	< .001				
Effort Expectancy (t)	-.155	.049	-3.160	.002				
Perceived Risks (t)	.179	.059	3.019	.003				
Issuer Characteristics[a]								
Issuer Malevolence (t)	.326	.040	8.221	< .001				
Issuer Power (t)	.175	.039	4.428	< .001				
Interaction Effects								
Issuer Malevolence (t) x Performance Expectancy (t)	.106	.054	1.968	.049				
Issuer Malevolence (t) x Effort Expectancy (t)	.159	.045	3.545	< .001				
Issuer Malevolence (t) x Perceived Risks (t)	.021	.054	.394	.694				
Issuer Power (t) x Performance Expectancy (t)	.112	.054	2.061	.039				
Issuer Power (t) x Effort Expectancy (t)	.011	.043	.261	.794				
Issuer Power (t) x Perceived Risks (t)	.135	.053	2.566	.010				
Control Variables								
Social Influence (t)	.039	.051	.769	.442				
Need for Cognitive Closure (t−1)	.048	.043	1.097	.273	-.080	.031	-2.614	.009
Powerlessness (t−1)	-.072	.055	-1.294	.196	-.003	.044	-.073	.942
Contextual Anxiety (t−1)	.099	.047	2.098	.036	-.081	.033	-2.452	.014
Age (t−1)	-.070	.035	-1.772	.076	-.030	.030	-1.056	.291
Gender (t−1)	-.085	.039	-2.173	.030	.026	.028	.934	.350
Education (medium; t−1)	-.071	.108	-.659	.510	-.022	.077	-.288	.773
Education (high; t−1)	-.107	.108	-.991	.322	-.001	.066	-.016	.987
Political Extremism (t−1)	.032	.044	.731	.465	-.036	.030	-1.198	.231
Model fit								
R^2	.527				.794			
χ^2	2527.448							
χ^2 / df	1.640							
RMSEA	.042							
CFI	.945							
TLI	.938							
SRMR	.050							

Note. [a] Issues Malevolence and Issuer Power are dummy coded according to the experimental conditions.









Note. IM = Issuer Malevolence, IP = Issuer Power, PE = Performance Expectancy, EE = Effort Expectancy, PR = Perceived Risk, Low MA represents MA = 0, High MA represents MA = 1, Low PE represents PE at –1 std. dev., High PE represents PE at +1 std. dev., Low EE represents EE at –1 std. dev., High EE represents EE at +1 std. dev., Low PR represents PR at –1 std. dev., High PR represents PE at +1 std. dev.

Web Appendix F: Validation of the Reciprocal Relationship between Conspiracy Mindset and Technology Conspiracy Beliefs in Two Randomized Controlled Experiments

F.1 Appendix Study A: An experimental validation of the impact of conspiracy mindset on technology conspiracy beliefs

This study aims to present additional evidence for the effect of conspiracy mindset on technology conspiracy beliefs using a randomized experiment. We designed a two-condition between-subjects experiment using the DiCa app scenario already employed in Study 2.

We decided to manipulate conspiracy mindset through priming by drawing on research that primes mindsets by asking participants to recall and describe recent situations (Sassenberg and Moskowitz 2005). Thus, participants in the high conspiracy mindset group (treatment condition) were asked to describe up to three situations in which they were puzzled, could not explain certain events, and felt there was a secret plot by two or more powerful actors that had hidden groups deliberately engage in actions that are potentially harmful to others and cause important social and political developments. In turn, participants in the low conspiracy mindset group (control condition) were asked to describe up to three situations that they found interesting and why. Afterward, participants were introduced to the DiCa app (see Web Appendix E.1 for details). We captured technology conspiracy beliefs with four items from Shapiro et al. (2016) on a seven-point Likert scale.

We then conducted a power analysis with G*Power (Faul et al. 2009) to determine a minimum threshold for the sample size. Drawing upon prior studies that manipulated conspiracy mindset through priming (Adam-Troian et al. 2019, Whitson et al. 2019), we assume a small effect size (d = .2). Given 80 percent power at an $\alpha = .05$, a lower bound of 620 observations is required to identify a positive mean difference between the treatment and the control group.

We recruited U.S. participants using Prolific Academic (Peer et al. 2017) in November 2023. After cleaning the data for participants who did not pass attention checks, we received a final sample of 637 valid answers. The following table depicts the sample demographics.

Age	**Percentage**	**Gender**	**Percentage**
18 – 29 years	22.2%	Male	56.4%
30 – 39 years	26.0%	Female	43.6%
40 – 49 years	19.8%	**Ethnicity**	
50 – 59 years	18.2%	White	64.6%
≥ 60 years	13.8%	Mixed	6.1%
		Asian	8.5%
		Black	17.4%
		Other	3.4%

We checked whether our randomization procedure worked as intended. We find no significant differences for age ($p = .668$), gender ($p = .079$), and ethnicity between ($p = .293$) the two groups. A t-test also reveals that the average response time between the treatment condition ($M = 674$ seconds, $SD = 404.571$) and the control

condition (M = 728 seconds, SD = 437.846) is not significantly different (p = .104). Finally, a manipulation check using the six-item conspiracy mindset scale by Imhoff & Bruder (2014) suggests that our treatment worked as intended. The mean value of the treatment group (M = 4.554, SD = 1.612) is significantly larger (p < .001) than the mean value of the control group (M = 4.108, SD = 1.658).

The results of the randomized experiment are consistent with the findings in Studies 1 and 2. The treatment group (high conspiracy mindset) reveals a higher mean value (M = 3.639, SD = 1.595, n = 314) on the technology conspiracy beliefs scale than the control group (low conspiracy mindset) (M = 3.178, SD = 1.459, n = 323). A t-test on two independent means suggests that the mean difference is significant (t = 3.805, df = 635, p < .001), which lends further support for H10a.

F.2 Appendix Study B: An experimental validation of the impact of technology conspiracy beliefs on conspiracy mindset

The goal of this study is to present additional evidence from a randomized experiment on the effect of technology conspiracy beliefs on conspiracy mindset. To do so, we again draw upon a two conditions between-subject experiment.

The starting point for the experimental study is again the DiCa app from Study 2. Participants were first informed about the app (see Web Appendix E.1) and randomly assigned to one of two conditions that displayed different news articles about the DiCa app. Both news articles present a thorough analysis of the DiCa technology of an expert group. While the expert group in the high technology conspiracy beliefs (TCB) condition (treatment condition) expresses serious concerns regarding the technical capabilities and the unclear agenda of the issuer, the expert group in the low TCB condition (control condition) neutrally described the technological characteristics and the issuer's background. Our variable of interest, conspiracy mindset, was then measured with the six-item conspiracy mindset scale by Imhoff & Bruder (2014).

Variable	Level	Manipulation
Technology Conspiracy Beliefs	Low (n = 327)	Global News Article Experts Highlight the Promise and Challenges of DiCa In-Car Technology at Auto Show At this year's North American International Auto Show, the spotlight was on DiCa, a groundbreaking in-car technology likened to a FireTV stick for vehicles, promising to revolutionize digital capabilities in U.S. cars. Global News spoke with Benjamin Vance, a renowned automotive expert and consumer advocate whose insights are highly valued in the industry. Vance and his team rigorously evaluated the DiCa device's performance and safety standards and conducted in-depth research into DicaTec Inc., the technology's issuer. Known for his thorough analysis and impartial perspectives in the automotive sector, Vance expressed his opinion: "DiCa represents a significant technological advancement in the automotive sector," Vance explained. "Our analysis shows that it's packed with innovative features that could redefine the in-car experience. However, as with any new technology, there are challenges to consider, such as adapting to user needs, efficient production, and shipping times. While DiCaTec Inc. appears well-structured and adequately funded, carving a niche in the highly competitive automotive sector remains a formidable undertaking. It's crucial for consumers to

	carefully balance the advantages of incorporating DiCa into their vehicles against the potential hurdles this technology may encounter, ensuring a well-informed decision-making process".
High (n = 332)	Global News Article Experts Highlight the Promise and Challenges of DiCa In-Car Technology at Auto Show At this year's North American International Auto Show, the spotlight was on DiCa, a groundbreaking in-car technology likened to a FireTV stick for vehicles, promising to revolutionize digital capabilities in U.S. cars. However, it wasn't just the innovation that caught attention, but also the grave concerns raised by experts. Global News spoke with Benjamin Vance, a renowned automotive expert and consumer advocate, whose insights are highly valued in the industry. Vance and his team rigorously evaluated the DiCa device's performance and safety standards and conducted in-depth research into DicaTec Inc., the technology's issuer. Known for his thorough analysis and impartial perspectives in the automotive sector, Vance expressed serious concerns: "DiCa might be heralded as a technological breakthrough, but our comprehensive analysis has uncovered serious red flags," Vance explained. "There's more to this device than meets the eye, particularly concerning hidden functionalities and undisclosed data transmissions that could pose significant dangers to consumers. This is particularly critical given DiCaTec Inc.'s notable ties to major players in Silicon Valley and senior officials in federal institutions, which raises questions about the broader implications of the technology. Considering the make-up of the technology and the company's background, we are concerned about the potential misuse of the technology for a hidden commercial or political agenda."

As in Study A (Appendix F.1), we recruited U.S. participants using Prolific Academic (Peer et al. 2017) in November 2023. After sorting out participants who did not pass attention checks, we ended with a sample of 659 valid answers. The following table depicts the sample demographics.

Age	**Percentage**	**Gender**	**Percentage**
18 – 29 years	26.6%	Male	52.2%
30 – 39 years	29.7%	Female	47.8%
40 – 49 years	21.6%	**Ethnicity**	
50 – 59 years	11.0%	White	66.6%
≥ 60 years	11.2%	Mixed	7.2%
		Asian	9.7%
		Black	10.6%
		Other	6.0%

Again, tests on age (p = .773), gender (p = .420), and ethnicity (p = .161) between the treatment and control group suggest that our randomization procedure worked as expected. Also, a manipulation check using the four items of for technology conspiracy beliefs (see Study 2) suggests that our treatment worked as intended. A t-test

($p < .001$) reveals that the mean value of the high TCB treatment group ($M = 4.346$, $SD = 1.345$, n = 332) is significantly higher than the mean of the low TCB group ($M = 3.152$, $SD = 1.390$, n = 327).

The results of the randomized experiment are consistent with the findings of Study 1 and Study 2. The treatment group (high TCB) exhibits a higher mean value ($M = 4.232$, $SD = 1.531$, n = 332) on the technology mindset scale than the control group (low TCB group) ($M = 3.894$, $SD = 1.616$, n = 327). A *t*-test on two independent means suggests that the mean difference is significant ($t = 2.760$, df = 657, $p = .006$), which lends further support for H10b from a controlled experimental setting.

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