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The Golden Age Is Behind Us: How the Status Quo Impacts the Evaluation of Technology

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Abstract
New technology invariably provokes concerns over potential societal impacts. Even as risks often fail to materialize, the fear continues. The current research explored the psychological underpinnings of this pattern. Across four studies (N = 2,454 adults recruited via Amazon Mechanical Turk), we found evidence for the role of status quo thinking in evaluating technology. In Study 1, we experimentally manipulated the reported age of unfamiliar technology and found that people evaluate it more favorably when it is described as originating before (vs. after) their birth. In Studies 2 through 4, participants' age at the time of invention strongly predicts attitudes toward a wide range of real-world technologies. Finally, we found that individual differences in status-quo-based decision-making moderated evaluations of technology. These studies provide insight into how people respond to the rapidly changing technological landscape.

Keywords
psychology of technology, status quo, judgment, open data, open materials, preregistered

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New technologies often face scrutiny concerning their societal impact. Is social media damaging teens' mental health (Twenge, 2018)? Is Google making us stupid (Carr, 2020)? This occurs not only for recent innovations but stretches as far back as the ancient world. Famously, Socrates lamented the advent of writing for its degradation of human memory (Plato, 360 B.C.E./1972). Again and again, new technologies raise serious concerns, and despite these fears rarely becoming a reality, the cycle continues. People fail to appreciate that new technology can bring about change without bringing about harm (Cecutti et al., 2021).

Recent analyses have examined the societal dynamics that give rise to "Sisyphean cycles of technology panics" (Orben, 2020). New technologies tend to produce polarized responses (Wartella & Robb, 2008) often rooted in a deterministic assumption that their impacts will be uniform and universal (boyd, 2014). These responses are embedded within a larger societal context that allows the same sorts of concerns to repeat. Policymakers, regulators, and researchers all play a critical role in this process (Orben, 2020).

In the current studies, we explored the underlying psychological mechanisms that give rise to skepticism toward technology. We propose that new technology challenges the status quo, leading it to be viewed more negatively. In essence, people evaluate technology positively when they are not old enough to remember that technology's introduction to society. However, technologies invented within one's lifetime infringe on the status quo and are thus evaluated less favorably. Next, we review the literature on status quo thinking and outline the unique predictions made by this account.

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Status Quo Bias

People tend to prefer states of the world to remain consistent (Eidelman & Crandall, 2012). When making a decision, people often take the easiest course of action: doing nothing or keeping the current course of action (Samuelson & Zeckhauser, 1988; Tversky & Shafir, 1992). In a medical context, this manifests as *patient inertia*, the tendency to select the default option even when it is inferior (Suri et al., 2013). Similarly, the default option exerts a powerful effect on high-stakes decisions such as organ donation (Johnson & Goldstein, 2003) and saving for retirement (Madrian & Shea, 2001). More generally, a bias toward the status quo reflects *satisficing*, an adaptive decision-making strategy that accounts for the constraints of cognitive limitations (Iyengar et al., 2006; Simon, 1956).

This tendency toward the status quo can have widespread implications as explored in *system-justification theory* (Jost, 2020). Status quo thinking leads people to defend their current sociopolitical systems, thus forming the foundation of entire political ideologies. Further, people who go against the status quo are also evaluated more negatively (Kay et al., 2009). This tendency to endorse current states of the world emerges as early as 4 years old, suggesting that status quo thinking plays a fundamental role in human cognition (Hussak & Cimpian, 2015).

The status quo influences how people understand the world around them. People heuristically consider something's existence as evidence of its value. For example, simply imagining a political candidate winning an election leads people to rate that event as more likely and more positive (Eidelman et al., 2009). Similarly, describing a natural form as more prevalent leads it to be rated as more aesthetically pleasing (Eidelman et al., 2009). Evaluations are also shaped by the length of time something has existed. For example, people rate acupuncture more favorably when it is described as 2,000 years old instead of 200 years old (Eidelman et al., 2010), and they reduce social distance from Mormons when their holy texts are described as dating from 2200 B.C. instead of 1823 A.D. (Warner & Kiddoo, 2014). Given the pervasiveness of the status quo bias, we explored whether it could also impact how people react to technological innovation.

The current studies investigated the role of status quo thinking in evaluations of technology by teasing apart two possible explanations for the role of age in evaluating technology. First, it could be that the age of technology best predicts evaluations: the newer the technology, the less positive its evaluation. Under this account, only the technology's age, not the participant's age, should factor into their assessments of the technology. Alternatively, we propose that status quo thinking explains people's preferences. This would lead people to prefer technology invented before they were born (the status quo relative to them) compared with technology invented after they were born. Thus, people's age at the time of a technology's invention would predict their attitude toward it (Studies 1–3). Further, under this account, a tendency toward preserving the status quo in decision-making would predict people's attitudes toward technology (Study 4).

Statement of Relevance

New technologies often garner much excitement but also fierce backlash. Technological innovations repeatedly raise concerns over their potential risks to society. Historically, this pattern has occurred for the automobile, radio, television, the smartphone, and many other inventions. The current research explored the psychological factors that contribute to these dynamics. Our core proposal is that new technology's threat to the status quo leads to negative evaluations. In line with this account, our findings showed that independent of the actual risks posed by technology, people have more positive attitudes toward technologies invented before their earliest memories. However, if people remember a time before an invention existed, they perceive that technology's impact on society as significantly more negative. These results help shed light on why cycles of concern over technology continually repeat.

Study 1

In Study 1, we tested whether a technology's age, relative to a person's own age, impacted the perceived societal impact of that technology. We hypothesized that participants would consider the technology's impact as more positive if they were told it was invented before (vs. after) they were born.

Method

Participants. Four hundred one participants from the United States (197 males, 203 females; age: M = 41.66 years, SD = 13.51) completed the study online through Amazon Mechanical Turk. All studies were conducted via Cloud Research (Buhrmester et al., 2018; Litman et al., 2017). According to an a priori power analysis, 176 participants were needed per condition to detect a small to

medium-sized effect (d = 0.30) with 80% power. Factoring in potential exclusions, we aimed to recruit 400 participants for Study 1. To ensure data quality, we designed the study so that participants who failed two initial attention-check questions did not complete the rest of the study (Chmielewski & Kucker, 2020; see Section S1 in the Supplemental Material at https://osf.io/bxjnr). This process was used for all studies. All studies were approved by the institutional review board.

Materials and procedure. To begin, participants provided demographic information: age, gender, and level of education. Next, participants were told, "Aerogel (pictured above) [see Section S1 in the Supplemental Material at https://osf.io/bxjnr] is a synthetic porous ultralight material derived from a gel, in which the liquid component for the gel has been replaced with a gas without significant collapse of the gel structure." This technology was selected because, though real, it is largely unknown, making it possible to manipulate its perceived age. Participants were randomly assigned to the born-before or born-after condition. In the born-before condition, participants were next told that aerogel was invented 15 years after they had been born. We dynamically presented the invention date based on each participant's age. For example, a participant born in 1980 would see, "It was invented in 1995 and is now widely used." In the born-after condition, participants were told that aerogel had been invented 15 years before they were born. For example, a participant born in 1980 would see, "It was invented in 1965 and is now widely used." After viewing this information, all participants were asked, "How would you describe the impact of aerogel on society?" and responded on a 7-point Likert scale ranging from −3 (*very negative*) to 3 (*very positive*). Finally, as a manipulation check, participants were asked, "Was aerogel invented before or after the year you were born?" (*before/after*), and a previous knowledge question asked, "Did you know about aerogel prior to completing this survey?" (*yes/no*).

Preregistration and open data. All preregistration forms, deidentified raw data files, and analytic syntax are available on OSF (https://osf.io/ke2f5/). All dependent variables and conditions are reported for all studies. All studies other than Study 1 were preregistered. All analyses followed the preregistration plan unless otherwise noted.

Results

Participants who were told they had been born after the invention of aerogel (born-after condition) evaluated aerogel more positively (M = 1.08, SD = 1.06) than those who were told they had been born before it was invented (born-before condition; M = 0.83, SD = 0.98), $t(399) = 2.46$, $p = .01$, Cohen's d = 0.25, 95% confidence interval (CI) = [0.05, 0.44]. The difference between conditions was greater when those who failed the check question (n = 39) or had previous knowledge of aerogel (n = 33) were excluded from the analysis: those in the born-after condition provided more positive evaluations (M = 1.09, SD = 1.04) than those in the born-before condition (M = 0.75, SD = 0.96), $t(329) = 3.12$, $p = .002$, Cohen's d = 0.34, 95% CI = [0.13, 0.56]. These results suggest that people evaluate technology differently on the basis of when that technology was invented relative to their own birth. These results are compatible with status quo thinking: People positively evaluate "inherited" technology compared with technology invented within their own life span.

The competing hypothesis, that people simply prefer older technology, predicts that older participants would have more positive evaluations because aerogel was described as especially old (either 15 years before or 15 years after their birth year). To test this account, we examined whether participants' age correlates with their evaluations. We found that there was no significant zero-order correlation between participant age and evaluation of technology, Pearson's $r = -.04$, 95% CI = [−.14, .05], $p = .39$. Results did not substantially change when experimental condition was included as a control variable. This suggests that status quo thinking (operationalized as participant age relative to invention date), not simply the age of the technology, explains participants' attitudes. Although suggestive, Study 1 examined only one (intentionally obscure) technology. In the subsequent studies, we built on this evidence by assessing evaluations of a wide range of real-world technologies.

Study 2

Study 2 further examined the role of status quo thinking by testing how a person's age at the time of invention for commonly used technologies affects their evaluation of those technologies. We hypothesized that technologies would be evaluated more positively when participants could not remember a time in their lives without that technology.

Method

Participants. Five hundred three participants from the United States (261 males, 242 females; age: M = 41.26 years, SD = 13.34) completed the study online through Amazon Mechanical Turk. For this and subsequent studies, we aimed to elicit at least 150 responses for each technology, consistent with recent calls for large samples (Simmons, 2014).

Materials and procedure. Participants evaluated the impact of 10 technologies on society. They were asked, "How would you describe the impact of [technology] on society?" and responded on a 7-point Likert scale ranging from −3 (*very negative*) to 3 (*very positive*). The order of questions was randomized. These 10 technologies—cell phone, electric car, laptop computer, Bluetooth, Wi-Fi, email, drone, self-driving car, blockchain (e.g., Bitcoin), and video games—were selected from a list of inventions that people considered important within their lifetimes, according to pretesting. Participants were then asked to indicate at approximately what age they were first exposed to each technology. They were also asked to indicate how frequently they used the technology in their daily lives on a 5-point Likert scale ranging from 1 (*never*) to 5 (*all the time*). Then they were asked to estimate what year they thought each technology was invented (unlike in Study 1, they were not explicitly provided an invention date). And finally, participants responded to a set of demographic questions about their gender, age, country of residence, and level of education.

In pilot testing, the inflection point (generalized-additive-model line of best fit shifting from convex to concave) occurred at 2.28 years of age (see the Supplemental Material at https://osf.io/bxjnr). Though this value was derived directly from the pilot data, it is noteworthy how closely it aligns with the best estimates of when children first form memories (Peterson, 2021). Accordingly, we preregistered our hypothesis that people would rate technologies invented before that threshold as more positive than those invented after. It is possible that status quo bias manifests itself in a less discrete fashion (i.e., not a sharp drop-off at a particular point in the life span). To account for the possibility that there is a negative slope (vs. a sharp drop-off) for evaluations of technologies invented later in life, we also report additional regression models (and accompanying plots).

Results

In Study 2, we evaluated age at invention in two ways: Method 1 used outside research (company websites, independent estimates, etc.) to determine when technology was invented. Pinpointing dates of invention was inexact for a number of reasons. For example, electric cars were technically invented in the late 19th century even though they were not widely adopted in the United States until the Tesla Roadster was released in 2008, so we set 2008 as the invention date. Because of this ambiguity, Method 2 used participants' estimates of the date of invention for each technology. On the basis of our preregistration, we excluded any estimated invention dates prior to the year 1900 or after 2021. Using a less stringent cutoff of 1000 instead of 1900 yielded the same results (see Section S2 in the Supplemental Material at https://osf.io/bxjnr).

Using Method 1 (described above), we conducted a linear mixed-effects regression model, using the *lme4* R package (Bates et al., 2015), that examined whether being older or younger than 2 years of age when a technology was invented (or having no memory of a time without it) predicted evaluations of that technology. Because invention years and participant age were collected as integers, we rounded the 2.28 cutoff from pilot testing to 2 years of age. The model included random intercepts for each participant to account for repeated measures, and all variables were standardized. Using Method 1, we did not find evidence that evaluations were different when participants were older than 2 years old than when they were 2 or younger, $\beta = -0.01$, $SE = 0.01$, bootstrapped 95% CI = [−0.03, 0.02], $p = .39$. However, when age at invention was treated as a continuous variable (not preregistered), we found a small but significant negative relationship between age at invention and technology evaluations, $\beta = -0.04$, $SE = 0.01$, bootstrapped 95% CI = [−0.07, −0.01], $p = .005$. In line with our theorizing, this suggests that being older when a technology was invented is associated with more negative evaluations of that technology. Using the original scale of the variables (not standardized) suggests that the predicted value of technology evaluation would be 0.06 points lower for every 10 years older the participant was when the technology was invented.

In contrast to the results using Method 1, a linear mixed-effects model using Method 2 found that evaluations were significantly lower when participants were older than 2 years old than when they were 2 years old or younger at their estimated date of the technology invention, $\beta = -0.04$, $SE = 0.01$, bootstrapped 95% CI = [−0.07, −0.01], $p = .008$. As with Method 1, when age at invention was treated as a continuous variable (not preregistered), there was a significant negative relationship between age at invention and technology evaluations, $\beta = -0.12$, $SE = 0.01$, bootstrapped 95% CI = [−0.16, −0.10], $p < .001$ (see Fig. 1). Using the original scale of the variables, this suggests that the predicted value of technology evaluation would be 0.09 points lower for every 10 years older participants were when they estimated the technology was invented.

We found further support for our account by analyzing the exploratory variable of self-reported age of first exposure to each technology. A linear mixed-effects model showed that people provided more positive evaluations of technology when they were first exposed to it at a younger age, $\beta = -0.15$, $SE = 0.02$, bootstrapped 95% CI = [−0.17, −0.12], $p < .001$ (for additional exploratory analyses, see Section S2 in the Supplemental Material at https://osf.io/bxjnr). In line with the results above,

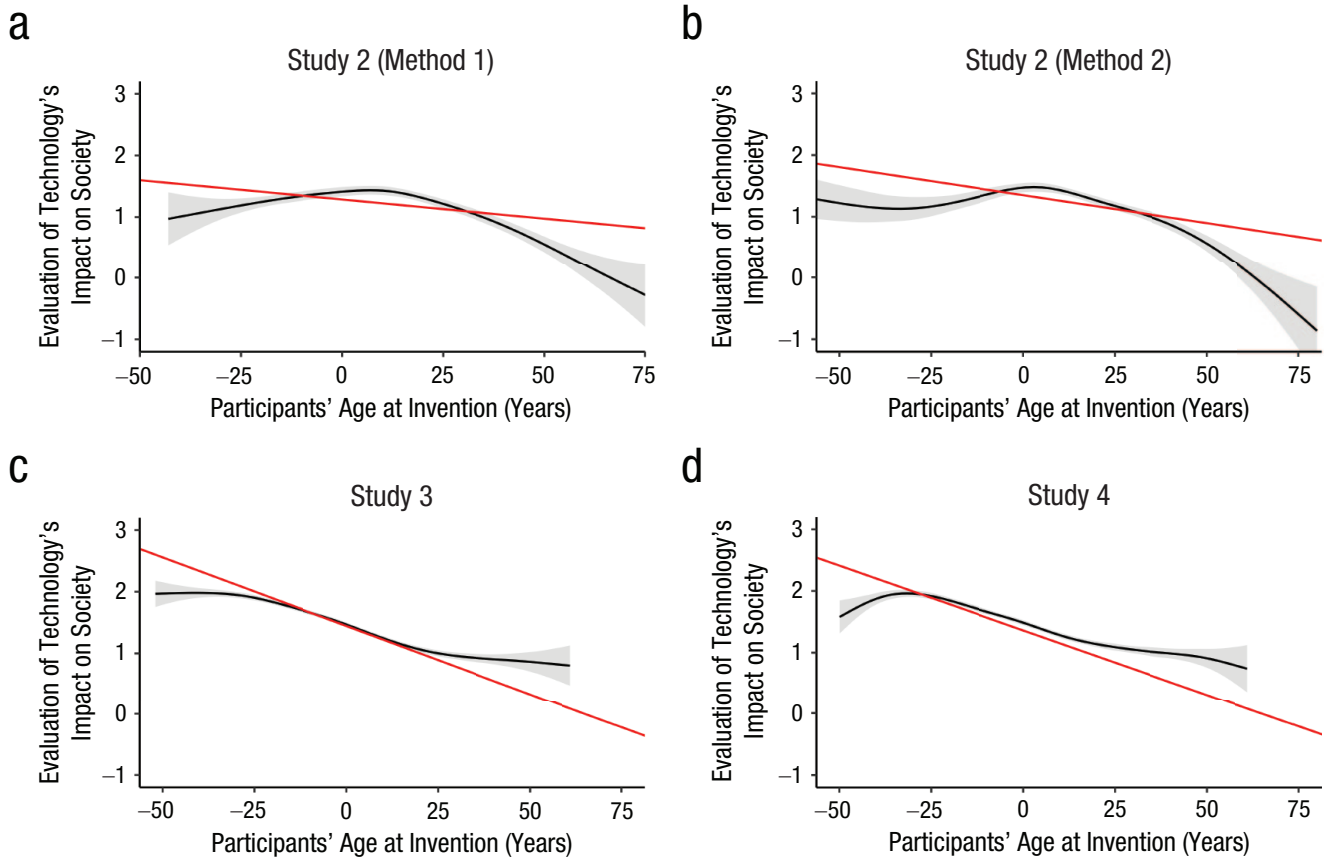

Fig. 1. Evaluation of technology's impact on society as a function of participants' age when the technology was invented, separately for (a) Study 2, Method 1; (b) Study 2, Method 2; (c) Study 3; and (d) Study 4. Evaluation of technology's impact on society ranged from −3 (*very negative*) to 3 (*very positive*). The red line represents the regression line from the mixed-effects model with random intercepts for each participant. The solid black line represents the generalized-additive-model line of best fit. The shaded area represents 95% confidence intervals. Study 2 determined the year a technology was invented using independent research (Method 1) and using participants' own perceptions of invention year (Method 2). Studies 3 and 4 used technologies and invention dates determined by a third party. The preregistered analyses for hypothesis testing dichotomized participants' age at invention.

this suggests that early experience with a technology leads to more favorable attitudes, whereas exposure later in life (a disruption of the status quo), leads to the opposite. Although our hypothesis focused on a binary cutoff (being 2 years old or younger vs. being older than 2 years at the time of invention), the data suggest a more gradual shift in people's understanding. Being born earlier relative to the invention date plus additional exposure early in life increases the likelihood that people consider the technology to be a part of the status quo.

Study 3

Study 3 replicated the findings of Study 2 by using the most popular technology for each year from 1950 to 2005, selected by a third party. In addition to replicating Study 2, the technologies in Study 3 vary dramatically in their function (e.g., Nintendo DS, internal pacemaker) and modern-day relevance (e.g., TV remote control, floppy disk). The increased variability of the technologies makes Study 3 an even more stringent test of our hypotheses.

Method

Participants. Eight hundred four participants from the United States (402 males, 402 females; age: M = 40.17 years, SD = 12.56) completed the study online through Amazon Mechanical Turk.

Materials and procedure. Participants were asked to evaluate the impact of 20 technologies. Just as in Study 2, participants were asked "How would you describe the impact of [technology] on society?" and responded on a 7-point Likert scale ranging from −3 (*very negative*) to 3 (*very positive*). Each technology displayed included a link to its Wikipedia page in case participants wanted to learn more. Each participant viewed a random subset of 20 technologies from 52 possible items mentioned in an Insider.com article titled, "The most popular tech gadget from the

year you were born" (Ettinger & Wilson, 2020). Although the items used in Study 2, compiled from participant suggestions of important inventions from their lifetimes, consisted of technologies still in use (e.g., email), the items in Study 3 also included older technologies no longer in use (e.g., camcorders). The set of items included one invention for most years between 1950 and 2005. It included a range of different technologies—for example, microwave ovens (1955), audiocassette tapes (1962), electric toothbrushes (1992), and the Xbox 360 (2005; for a full list, see Section S3 in the Supplemental Material at https://osf.io/bxjnr). Like Study 2, the date of invention was never presented to participants. After providing their evaluations, participants completed a demographics questionnaire.

Results

We again hypothesized that evaluations of technologies would be lower when participants were older than 2 years of age when the technology was invented. In Study 3, the year of invention was based on the date determined by the Insider.com article (Ettinger & Wilson, 2020). As in Study 2, we conducted a linear mixed-effects regression model with random intercepts for each participant and a binary fixed effect indicating whether the participant was over or under 2 years old when the technology was invented. We found that evaluations were significantly lower when participants were older than 2 years old at the time of invention, $\beta = -0.25$, $SE = 0.01$, bootstrapped 95% CI = [−0.27, −0.24], $p < .001$.

Similarly, a linear mixed-effects regression model with random intercepts for each participant revealed a significant negative relationship between age at invention (as a continuous variable) and technology evaluations, $\beta = -0.34$, $SE = 0.01$, bootstrapped 95% CI = [−0.36, −0.32], $p < .001$ (not preregistered; see Fig. 1). Using the original scale of the variables suggests that the predicted value of technology evaluation would be 0.22 points lower for every 10 years older the participants were when the technology was invented. Replicating the findings from Study 2 with a larger magnitude and with a different set of technologies (some of which are no longer in regular use), these results show that being older at the time of invention predicted more negative evaluations of the technology.

Study 4

In Study 4, we tested the hypothesis that individual differences in status quo bias moderate the effect of age at invention on technology evaluations. Whereas the previous studies inferred status quo on the basis of participants' age, Study 4 measured status quo bias directly to determine whether it impacted the phenomena explored thus far.

Method

Participants. Seven hundred fifty-seven participants from the United States (372 males, 385 females; age: M = 41.44 years, SD = 12.95) completed the study online through Amazon Mechanical Turk. Eleven participants failed a preregistered attention check, so the sample size for analysis was 746.

Materials and procedure. Study 4 used the same procedure as Study 3, but participants also responded to five hypothetical scenarios designed to assess the status quo bias (Samuelson & Zeckhauser, 1988). These decisions measured the tendency to keep the status quo in a variety of domains, such as personal investing, employment decisions, and government spending (for the full set of questions, see Section S4 in the Supplemental Material at https://osf.io/bxjnr). The number of times each participant selected the status quo from the multiple-choice options (0–5) comprised an individual-difference measure of the status quo bias. We randomized whether participants completed the status-quo-bias questions before or after the technology evaluations.

Results

On the basis of our preregistration, we ran a linear mixed-effects regression model to predict technology evaluation with random intercepts for each participant and fixed effects for age at invention and status quo bias. Age at invention was expressed as a binary variable for whether the technology was invented before or after they were 2 years old (cutoff point based on pilot testing). Just as in Study 3, we found that being older than 2 years old when a technology was invented was associated with lower evaluations of that technology, $\beta = -0.24$, $SE = 0.01$, bootstrapped 95% CI = [−0.25, −0.22], $p < .001$. The linear mixed-effects model suggested a marginally significant ($p < .05$, but bootstrapped CI contains 0) main effect of status quo bias, $\beta = 0.04$, $SE = 0.02$, bootstrapped 95% CI = [−0.002, 0.08], $p = .04$.

We then compared the goodness of fit of this model with an identical model that also included an Age at Invention × Status Quo Bias interaction, in order to test our hypothesis that status quo bias moderates the effect between age at invention and technology evaluation (for additional details, see Table S1 of Section S4 in the Supplemental Material at https://osf.io/bxjnr). This approach tests interactions for mixed-effect models (Winter, 2013). We found a significant Age at Invention × Status Quo

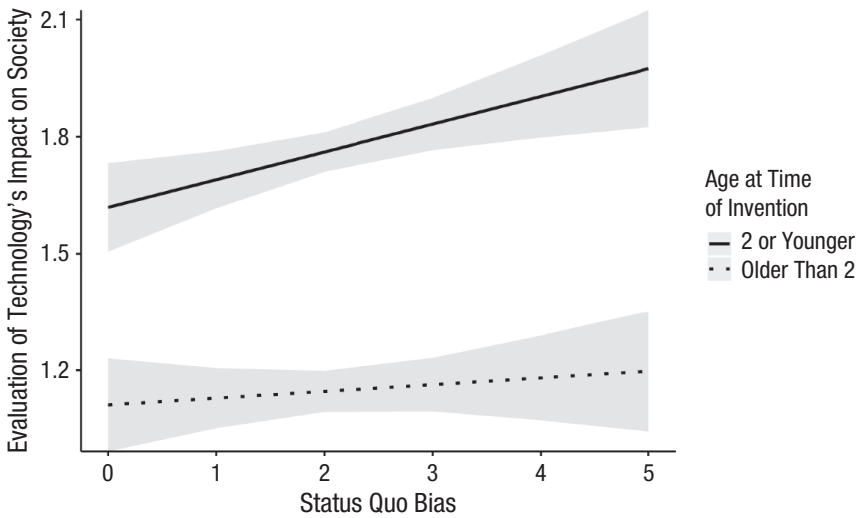

Fig. 2. Interaction between participants' status quo bias and their age at the time of technology's invention on their evaluation of that technology in Study 4. In this analysis, age when a technology was invented was dichotomized (older than 2 vs. 2 or younger). Evaluation of technology's impact on society ranged from −3 (very negative) to 3 (very positive). The shaded regions represent 95% confidence intervals.

Bias interaction, $\chi^2(1) = 7.13$, $p = .008$. This suggests that status quo bias moderates the relationship between being older than 2 when a technology is invented and evaluations of that technology (see Fig. 2). In other words, when an individual has a stronger status quo bias, their age at invention (2 years old or younger vs. older than 2 years old) is more predictive of their evaluations of technology.

We also conducted a linear mixed-effects model that replaced the binary age variable with the continuous variable of participants' age at invention. This analysis found a significant negative relationship between age at invention and technology evaluations, $\beta = -0.33$, $SE = 0.01$, bootstrapped 95% CI = [−0.35, −0.31], $p < .001$ (see Fig. 1). This replicated the findings from Studies 2 and 3 that being older at the time of invention predicts more negative evaluations of the technology. Using the original scale of the variables, this suggests that the predicted value of technology evaluation would be 0.21 points lower for every 10 years older the participants were when the technology was invented. We also found a significant main effect for the effect of status quo bias on technology evaluations, $\beta = 0.05$, $SE = 0.02$, bootstrapped 95% CI = [0.01, 0.08], $p = .02$. This suggests that greater status quo bias is associated with more positive evaluations of technology, although the effect size is very small.

As in the model with age as a binary variable, and using the same method of analysis, we found a significant Age at Invention × Status Quo Bias interaction, $\chi^2(1) = 10.23$, $p = .001$ (for additional details, see Section S4, Table S2, in the Supplemental Material at https://osf.io/bxjnr). This suggests that status quo bias moderates the relationship between age at invention and technology evaluations. The effect of invention date on technology preferences is stronger for individuals with higher levels of status quo bias.

General Discussion

Four studies demonstrated how status quo thinking underlies people's attitudes toward technology. When a new invention arrives within one's own lifetime, it is evaluated more negatively than technology that is part of the status quo. Although alternative explanations may exist for particular studies or particular technologies, our theorizing accounts for the overall pattern of the data across the diverse empirical approaches in our studies. Study 1 experimentally manipulated the participant's perceived age at invention, and Studies 2 through 4 relied on three distinct estimates of when each technology was invented (our own research, participant estimates, and third-party assessments). Additionally, Study 4 demonstrated that individual differences in status quo bias (Samuelson & Zeckhauser, 1988) moderated the effect. With one exception (Method 1 in Study 2), these results support our theory that status quo bias drives evaluations of technological innovation. As Lakens and Etz (2017) demonstrated, mixed results in a line of research are to be expected even when there is a true effect.

The current studies contribute to recent discussions regarding cyclical concerns over new technology's societal impact (Orben, 2020). Our results pinpoint the

psychological mechanism of status quo thinking and demonstrate its role in this process. This understanding helps predict when to expect resistance to technology: Resistance will be higher among those who witness the emergence of a new technology than for those who never lived without it. These findings can illuminate contemporary issues such as artificial intelligence, which, like many technologies before it, elicits sociological fear (Liang & Lee, 2017). Further, these insights resonate with the suggestion that new innovations should be connected to more established products (Rao et al., 2008). By tethering new inventions to preexisting technologies, they may be more likely to be considered part of the status quo.

In Studies 2 through 4, we observed that technology evaluations and age at invention are related in a continuous (vs. discrete) fashion such that being older at the time of invention corresponds to less favorable evaluations. This observed pattern is consistent with the status quo explanation and adds nuance to our preregistered hypotheses that focused on a discrete cutoff. As Study 2 indicates, being older when first exposed to a technology is associated with more negative evaluations. This finding suggests that notions of the status quo may develop over time. Further, it is quite likely that the status quo becomes relevant for different technologies at different ages. For example, people might play video games at a young age but will not drive a car until their teens. Thus, the status quo for video-game consoles may solidify earlier in life than the status quo for technologies associated with driving a car (e.g., back-up cameras). These results also align with survey data on "early adopters." Only 28% of Americans are classified as strong early adopters, indicating a substantial resistance to new technology. However, younger people, especially young men, are more likely to try new technologies (Kennedy & Funk, 2016). In line with our findings, young people may adopt new technology because they are less prone to view it as infringing on the status quo.

Much as musical preferences are shaped during adolescence (Holbrook & Schindler, 1989), there could be a sensitive period during which people's attitudes toward technology are formed. Like the status quo account, the sensitive-period account predicts a decline in evaluations for technology invented later in one's life. However, this account additionally predicts that for technologies invented before the sensitive period, the older the technology, the lower people's evaluations. Although we found suggestive evidence for this pattern in Study 2, it was not supported in Studies 3 and 4 (see Fig. 1). Additionally, people may simply prefer older technologies to newer technologies, regardless of their age. Study 1 demonstrated that age at invention significantly affected evaluations of a technology, whereas age of the technology did not. In sum, the evidence points toward status quo thinking driving perceptions of technology.

The same pattern we found for technology could apply to other domains as well. Status quo thinking plays a powerful role in politics (Jost et al., 2003), but perhaps it also shapes how other people are viewed. *Youngism*, a form of ageism, results in discrimination against and harsher social judgments against younger generations (Francioli & North, 2021). Further, today's youth ("kids these days") are perceived to be in decline compared with previous generations (Protzko & Schooler, 2019). Similar to the current findings, status quo thinking could lead to negative attitudes toward people who have been alive for less time.

Although the current studies assessed how people perceive technology's impact on society, more research is needed to understand the implications of these evaluations. First, the current studies asked participants to consider technology's impact on society. As an initial demonstration, we adopted intentionally broad phrasing in order to capture participants' general attitude. Future research could use more precise wording to tease apart potential ambiguities; for example, some participants may focus on scientific progress, whereas others focus on well-being. Additionally, in some instances, a negative evaluation of technology could result in an impactful decision (e.g., what to buy, what to allow children to use, whether or not to get vaccinated). Exploring the link between attitudes and behavior remains an important area for future research. Further, the current studies did not explore other potentially relevant individual-level variables. For example, political preferences or personality (i.e., openness to experience) could play a critical role in better understanding attitudes toward technology. Lastly, future research could expand the generalizability of these findings by testing additional technology and other participants (the current studies were limited to adults from Amazon Mechanical Turk).

In sum, although resistance to new technology has been well documented, the current studies provide insight into why it occurs. Status quo thinking results in some people holding particularly negative opinions about certain technologies. To fully understand reactions to technology, it is important to consider the age of the invention relative to the age of the person evaluating it.

Transparency

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Author Contributions

A. H. Smiley and M. Fisher developed the study concept and contributed to the study design. Both authors collected,

analyzed, and interpreted the data. Both authors drafted the manuscript and approved the final version for submission. Both authors contributed equally to this work and are listed in random order.

Declaration of Conflicting Interests

The author(s) declared that there were no conflicts of interest with respect to the authorship or the publication of this article.

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Open Practices

Deidentified raw data, analysis code, and study materials have been made publicly available via OSF and can be accessed at https://osf.io/ke2f5/. The design and analysis plans for the experiments were preregistered on AsPredicted (copies are available at https://osf.io/ke2f5/). This article has received the badges for Open Data, Open Materials, and Preregistration. More information about the Open Practices badges can be found at http://www.psychologicalscience.org/publications/badges.

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