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Can Online Civic Education Induce Democratic Citizenship? Experimental Evidence from a New Democracy

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Abstract: *How can democratic values and behavior be induced in new democracies? We designed and tested three original civic education interventions to answer this question, using Tunisia as a case study. Participants were recruited through Facebook and Instagram, where they were randomly assigned to either one of three treatment groups or a placebo. Two treatments were derived from prospect theory, emphasizing the gains of a democratic system or the losses of an autocratic system. A third treatment, derived from self-efficacy theory, provided practical information regarding participation in the upcoming 2019 elections. Our findings suggest that online civic education has a considerable effect on democratic citizenship, including a significant reduction in authoritarian nostalgia and increasing intended political behavior. We further find differences between the three treatments, with the loss and gain treatments having overall more consistent impact than self-efficacy, though the latter frame has notable effects on political efficacy and registration.*

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Democracy is under threat worldwide. Societies are backsliding into authoritarianism in countries as diverse as Turkey, Hungary, India, and Brazil. Unexpectedly, contemporary democratic recessions are characterized by bottom-up processes with authoritarian leaders, especially in new democracies, taking power through popular elections rather than elite-driven coups d'état (Lührmann and Lindberg 2019). This article is motivated by the question of how to ensure democratic consolidation, focusing on the crucial role of citizens' support for democracy, the rejection of its alternatives, and their active political engagement (Almond and Verba 1963; Claassen 2020). Given that citizen support is essential for democratic

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consolidation, we ask how such support and engagement are generated, especially in contexts of authoritarian pasts.

In this article, we investigate whether the online environment can provide a platform for civic education interventions to strengthen (especially new) democratic societies. As of November 2021, Facebook had 2.9 billion active users worldwide,[1] many of whom live in current or former dictatorships. Given this impressive reach, social media platforms can provide a much more effective tool for circulating civic education messages than traditional face-to-face efforts. However, we still know little about whether and how interventions delivered to users of these platforms can play a role in promoting democratic development.

In this study, we use social media platforms to recruit individuals in a democratizing regime to receive original online civic education content. We assess the effectiveness of different theoretically derived civic education campaigns designed to (1) improve citizens' "civic competence" (e.g., self-efficacy), (2) strengthen support for democratic norms and institutions, (3) reduce authoritarian nostalgia, and (4) generate participation in national elections. We thereby focus on the impact of online civic education on young adults, given the overriding theoretical importance of this group in furthering democratic consolidation (Fesnic 2016; Neundorf 2010), as well as the priority given to youth by international donors in their civic education programming.[2]

To achieve these objectives, we test our interventions in Tunisia—a new democracy with a relatively recent authoritarian past. Subjects were recruited through advertisements placed on Facebook and Instagram; they were then randomly assigned to either three different videos on civic education or a placebo intervention. About 2,000 participants aged 18–35 took part in the study, focusing on a crucial demographic group of democratic change. The originally designed educational interventions were based on the social-psychological theories of prospect theory (Kahneman and Tversky 1979) and self-efficacy (Bandura 1997). One treatment arm emphasized the benefits of a democratic system (*gain*), another emphasized the losses of not having a democratic system by pitting autocracy versus democracy (*loss*), and a third attempted to induce *self-efficacy* and electoral participation by offering a tutorial on how to put in practice civic education. The placebo group was exposed to a nonpolitical treatment about wildlife conservation. Survey data were collected before and after the interventions using SurveyMonkey.

Our results confirm that exposure to online civic education has a positive effect on respondents' democratic values, political efficacy, and intentions to register and engage in campaign-related political participation. We find differences between the three treatments as well, with the loss and gain treatments having overall more consistent impact than self-efficacy, though the latter frame has notable effects on political efficacy and intention to register. In line with expectations from prospect theory, the loss frame is more effective across the range of democratic values compared to the gain frame, in particular in reducing authoritarian nostalgia and assessing the democratic performance of the current Tunisian regime. Finally, behavioral intentions were more pronounced among those not previously registered to vote; among this group, intention to register and vote in the 2019 elections increased by 8 and 6 percentage points, respectively.

This article contributes to various, often disconnected literatures. First, the research contributes to the study of democratic consolidation, specifically on the development of democratic norms and behavior in new democracies (Mishler and Rose 2007; Neundorf 2010). We thus directly attempt to establish how democratic citizenship can be *created* in a context where the vast majority grew up in an autocracy or during a turbulent transitioning period.

Second, this article advances research on civic education and democracy promotion, which is traditionally conducted offline. Our study moves civic education *online*, where it can reach many more people at much lower costs, though with the potential drawback of delivering messages in a more passive fashion than via more interactive learning methods that have sometimes been accomplished offline (Campbell 2019; Torney-Purta et al. 2001). We achieve this innovation by actively using social media platforms to recruit participants into these varying, original civic education interventions designed to impact democratic orientations and political engagement.

Finally, the design also allows the comparison of civic education content derived from prospect and self-efficacy theories to assess which theory-driven messages have the strongest effects on a diverse set of outcomes. We are not aware of any other study that has compared the effectiveness of different original civic education interventions in this fashion.

[1] See https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/ (accessed December 9, 2021).

[2] See the report on the strategic importance of youth by USAID (https://www.usaid.gov/youthimpact; accessed January 24, 2022).

Democratic Consolidation and Civic Education

Democratic support is critical for the consolidation and survival of democratic regimes (Almond and Verba 1963; Claassen 2020). Research has suggested that individuals simply need to live in a democracy, especially during their formative years, to form and retain political beliefs and behavior that foster democratic political cultures and ensure democracy's resilience (Fuchs-Schündeln and Schündeln 2015). However, Neundorf and Pop-Eleches (2020: 1) estimate that 9 out of 10 people in the world today had direct or indirect exposure to authoritarian regimes. Research focusing on democratic consolidation in Central Eastern Europe has demonstrated that it might take at least one generation for democratic culture to be established in post-authoritarian societies (Mishler and Rose 2007). A central role thereby is played by younger generations, whose members have not been indoctrinated by the previous regime and are more impressionable to the new democratic system (Fesnic 2016; Neundorf 2010).

Based on this premise, it is crucial to ask how democratic political culture can emerge in post-authoritarian societies. One important factor is the role of civic education, which is usually provided as part of school education with the goal of inculcating democratic values among younger cohorts in preparation for their future roles as democratic citizens (Torney-Purta et al. 2001). In new democracies, the urgent need to develop additional supportive political culture and resilience against authoritarian backsliding has led to the proliferation of civic education programs targeted toward adults, young and old. These programs, often sponsored by international donors in partnerships with local civil society organizations, include activities such as voter education and mobilization, promotion of women's rights, and social and political tolerance (Finkel 2003).

Given the importance of young people as agents of democratic change, special focus is often given to this demographic group in these programs. The United Nations, for example, stresses the "importance of youth participation at all levels," with the concomitant need for young people to be given "proper tools, such as education about and access to their civil rights."[3] Similarly, the United States Agency for International Development (USAID) "prioritizes programming for youth" because they "can be harnessed to build greater participation, engagement in political processes, and a more robust democracy."[4]

Over the past several decades, a sizable literature has emerged regarding the impact of civic education programs on a range of political culture and participation-related outcomes. The general pattern of findings in the literature suggests that these programs can be effective in developing positive democratic orientations and behaviors. Observational and experimental studies have confirmed strong effects of civic education interventions on political participation (Finkel 2003; Mvukiyehe and Samii 2017), including voter turnout (Aker, Collier, and Vicente 2017; Gine and Mansuri 2018), as well as on participants' levels of political knowledge and political efficacy (Bratton et al. 1999). Civic education appears to have weaker but detectable effects on political tolerance and support for democratic norms (Finkel and Lim 2020; Finkel and Smith 2011) and the rejection of violence and support for the peaceful resolution of conflicts (Collier and Vicente 2014; Paluck and Green 2009).

As extensive as this literature has become, there are nevertheless some significant gaps. First, little is known about the effectiveness of civic education delivered online. The majority of civic education evaluations conducted thus far have been of interventions delivered face-to-face. A handful of studies have examined mass media interventions, such as radio programs, in promoting democratic values or inter-ethnic tolerance (Paluck and Green 2009). However, little is known about whether educational interventions delivered online with subjects recruited from social media platforms such as Facebook can be effective in promoting democratic values and behaviors.

What effects should be anticipated from online civic education? There are reasons to be skeptical about the potential educative impact of programs delivered online. Individuals who are most active on social media may be unlikely to pay close attention to any given piece of political information they encounter, limiting the amount of change the messages produce (Foos, Kostadinov, and Nikolay 2020). And even if attention is paid, information on social media is typically consumed passively by individuals in isolation from others, and thus unlikely to be delivered using participatory pedagogical methods

[3]See the UN's "Society and Decision Making Factsheet" (https://www.un.org/development/desa/youth/society-and-decision-making-factsheet.html; accessed January 24, 2022).

[4]See USAID's "Democracy, Human Rights and Governance (DRG) Strategy Report" (2013, 14; https://reliefweb.int/sites/reliefweb.int/files/resources/USAID%20DRG_%20final%20final%206-24%203%20%281%29.pdf; accessed January 24, 2022).

that have produced the greatest impacts in previous work.

Nevertheless, there are also reasons to expect positive impacts of civic education messages delivered online. Certainly, the reach of social media is vastly greater than face-to-face or traditional media interventions, so that even relatively small effects at the individual level may have large aggregate impacts at relatively low cost (Korda and Itani 2013). In addition, recent work has pointed to important effects of social media usage on conventional participation and on political protest (e.g., Breuer, Landman, and Farquhar 2015; Jost et al. 2018), leading to the expectation of positive effects from tailored information campaigns delivered on those platforms. Moreover, even if small effects are seen by recipients, online messaging may be amplified through spillover effects, as individuals re-transmit messages within their social networks (Bond et al. 2012; Coppock, Guess, and Ternovski 2016).

It is also the case that little is known about the specific civic education messages, information, or frames that are most effective in post-authoritarian democracies in bringing about attitudinal or behavioral change. Virtually all existing civic education evaluations have assessed the impact of programs that have more or less uniform content (e.g., Collier and Vicente 2014). To our knowledge, in none of the extant literature does the treatment itself vary in terms of content in order to assess which kinds of messages may have more powerful impacts. We know little, for example, about whether frames emphasizing the benefits of an emerging democratic political system are more effective than frames emphasizing negative aspects of previous authoritarian regimes. Similarly, we know little about the relative effectiveness of emotional, ideological, or instrumental appeals in fostering the development of democratic attitudes and participatory dispositions. In short, the impact of online delivery of civic education, as well as the kinds of frames or messages that may be most effective, is at present inadequately understood.

Theoretical Expectations: Civic Education Frames

We expect that online civic education emphasizing different aspects of democratic regimes and citizenship will have corresponding effects on individual values and civic engagement. Certainly, a vast number of alternative frames are possible in testing the effects of online (and offline) educational interventions; here, we focus on frames derived from two widely established theories from social psychology and behavioral economics: prospect theory and self-efficacy theory. The first defines gain- and loss-framed mechanisms to encourage participants to reflect on the benefits of democracy versus the costs of authoritarian regimes. The second focuses on increasing individuals' self-efficacy beliefs, or their capacity for participating effectively in political life.

Prospect Theory

Evidence in psychology and economics suggests that people overvalue losses relative to comparable gains, so that the pain derived from losses exceeds the pleasure from gains (Kahneman and Tversky 1979). Contrary to the postulate of an individual utility function that is defined over level of assets, people appear to be more sensitive to gains and losses from a reference point or status quo rather than to levels of wealth and welfare (Kahneman and Tversky 1979). The central assumption of prospect theory is that losses and disadvantages have greater impact on preferences than gains and advantages, so that negative outcomes are weighted more heavily than positive ones (Tversky and Kahneman 1991). This violation of expected utility theory is also known as loss aversion. Much research has confirmed prospect theory's predictions for explaining deviations from expected utility theory (for a review, see Barberis 2013). For example, in political science, McDermott (2001) studied how prospect theory may explain conflict resolution, and Linde and Vis (2017) examined legislator behavior. More recently, Bhatti et al. (2020) applied prospect theory in a field experiment testing the relative effectiveness of gain and loss messages in a Danish voter mobilization mail campaign. In other disciplines, loss–gain framing has proven to be effective in the field at increasing blood donation (Chou and Murnighan 2013) and teachers' performance (Fryer et al. 2012).

The prospect theory interventions that we have designed are, to the best of our knowledge, the first to be implemented in the online environment, and the first to be undertaken in an emerging democratic context. Two out of the three interventions we have designed present gain and loss frames regarding democracy and autocracy, that is, messages that invoke pleasure (*gain-framed*) and displeasure (*loss-framed*) derived from the existence or absence of democratic freedoms adapted to the Tunisian context. Following the discussion above, we expect that exposure to the loss frame, that is, emphasizing the loss of human and civil rights experienced under autocratic regimes, will produce stronger effects than the frame emphasizing the gains to individuals from living under

democratic regimes. Individuals exposed to the loss frame are expected to have higher levels of both democratic regime support, given the greater value placed on democracy *per se* when it appears it may be taken away, as well as greater levels of political participation, as individuals will be motivated to engage in the democratic system to prevent the losses associated with autocratic rule.

Self-Efficacy

A third civic education frame is based on the social cognitive theory of self-efficacy. Bandura (1997) argues that individuals who are self-efficacious are more able to exercise some measure of control over social systems when facing limited opportunities and constraints. Bandura theorizes that one important source of self-efficacy beliefs are "enactive mastery experiences," which involve the development of "cognitive, behavioral and self-regulatory tools for creating and executing effective courses of action to manage ever-changing life circumstances" (p. 80). This source of self-efficacy is considered the most influential, as it provides evidence of whether one can muster whatever it takes to succeed (Bandura 1997; Bandura and Wood 1989). The mechanism requires people to understand and internalize what it takes to achieve a specific goal. Importantly, persuasive messages reminding individuals of their ability to exercise control have been found to be effective in complementing actual behavior mastery in the development of self-efficacy beliefs (Bandura 1997).

In the field, quasi-experimental studies have used *vicarious experiences* and *verbal persuasion* as mechanisms to promote gender equality and sexual education, as well as to eradicate harmful social and cultural practices among TV audiences (for a review, see Bandura 1997, chap. 3). Rigorous experimental studies have become increasingly common, where vicarious experiences have been used to increase awareness of sexually transmitted diseases (Banerjee, Ferrara, and Orozco 2019), to increase entrepreneurial self-efficacy beliefs (Bernard et al. 2015), and even to increase compliance of measures under COVID-19 (Banerjee et al. 2020).

In our study, we implement *enactive mastery experiences* drawing on Nickerson and Rogers (2010). In their study, they employed the *implementation intention strategy* by asking experimental participants about the time and location when they would be voting through phone interviews. This is similar to Aker, Collier, and Vicente's (2017) "civic education" treatment, which provided specific information on an upcoming election in Mozambique, along with instructions on how to vote. In our case, we showed an online tutorial to our participants to explain how to register to vote and asking them to implement a voting plan for the upcoming Tunisian presidential and legislative elections.[5]

In contrast to the treatments emphasizing gains and losses from democratic and authoritarian regimes, we expect the self-efficacy treatment to affect feelings of political self-competence and behavioral intentions more strongly than general democratic values.

Testable Hypotheses

Based on our theoretical framework, we test three specific hypotheses:

H1: Civic education frames will strengthen democratic values, reduce authoritarian nostalgia, and increase political efficacy and intentions to participate in the political process, relative to exposure to a placebo treatment.

H2: Those exposed to the loss-framed treatment will react more strongly to the civic education interventions than those exposed to the gain-framed treatment.

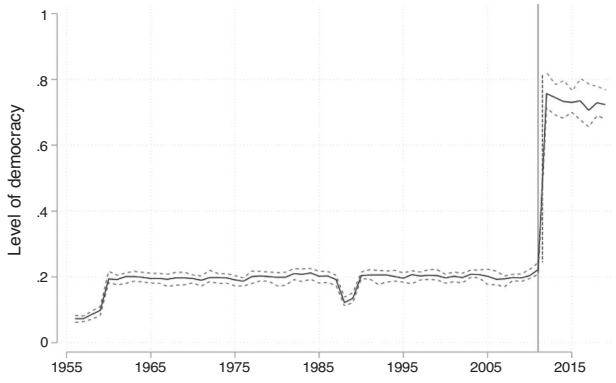
H3: The gain and loss-framed treatments will be more effective than the self-efficacy treatments in strengthening democratic values. The self-efficacy frame is expected to have a larger effect on political efficacy and intentions to participate in the political process.

Research Design

This section outlines the empirical strategy of this study. We first provide some background on Tunisia before outlining the experimental design and the content of the three online civic education interventions. We also discuss the various outcome variables that were measured using an online survey.

[5]We use a tutorial instruction in an effort to increase participants' self-efficacy beliefs. Similar to other implementations of enactive mastery experience, the videos for this treatment show the steps to achieve a particular goal; though, in contrast to other implementations, we do not provide explicit feedback to participants (e.g., Levy 2018).

FIGURE 1 Development of Democracy in Tunisia since Independence in 1956



Notes: Data source is Varieties of Democracy, v. 10. Democracy is measured using the electoral democracy index, which varies from 0 to 1, with 1 indicating the achievement of ideal electoral democracy (Coppedge et al. 2020, 42). Dashed lines indicate 95% confidence intervals

Tunisia: Case Study

Tunisia is currently undergoing a democratic transition after decades of authoritarian rule, having been dominated by one party and only two heads of state—Habib Borguiba and Zine El Abidine Ben Ali—from independence in 1956 until 2011. Widespread protests initiating the Arab Spring in late 2010 against President Ben Ali led to his exile. Tunisia's democratic transition can be classified as a social movement, given that the agents of change were predominantly ordinary citizens (Munck and Leff 1997). Sometimes referred to as the "Facebook Revolution" (Karolak 2020, 8), the Tunisian uprising was somewhat unusual due to the central role of social media. The use of digital communication helped the protest movements be more efficient, which probably explains the speed with which the dictatorship was overthrown (Breuer, Landman, and Farquhar 2015). However, the subsequent transition and the process of consolidation are very similar to other uprisings, and overall, social media is now less central to the political process than during the transition (Karolak 2020).

Since 2011, democratic elections have been held five times in the country: for the Constituent Assembly in 2011 and for the parliament and presidency in 2014 and 2019. Using data from Varieties of Democracy, Figure 1 demonstrates that Tunisia is currently considered democratic. Despite making important institutional advances, Tunisia's young democracy is not yet consolidated and might even be at risk of backsliding (Brumberg and Salem 2020; Marzouki 2022). The country faces several internal and external threats, such as stagnating economic growth, rampant corruption, widespread political estrangement, and terrorism. In terms of democratic development, Tunisia shares many similarities with transitions in other parts of the world. Tunisia may therefore be considered a typical case of a post-authoritarian new democracy (Gerring 2004).[6]

For a new democracy to survive such crises, a strong commitment to the democratic system among the population is a necessary condition (Claassen 2020). However, as demonstrated in Appendix A.2 (p. 4), support for democracy is still very low in the country. Moreover, the latest country report by the Arab Barometer (2019, 19) shows that skepticism of democracy is increasing, with more and more people linking democracy to a weak economy and 51% describing democracy as indecisive in 2019 (compared to only 19% in 2011).

What is most concerning is the low satisfaction with democracy, low trust in the government and low political interest among young people (see Figure A.3, p. 5 in the appendix). Turnout is also particularly low among this age group (Mansouri 2020). Young people are usually considered to be a driving force of democratization (Neundorf 2010). Given these findings, we believe that efforts to improve the commitment of younger people to democracy as well as mobilizing them to become active in the political process are particularly important. Therefore, our educational interventions, tested here, focused on younger Tunisians.

Experimental Design

Our online experiment was implemented in collaboration with the head and local offices of the nongovernmental organization (NGO) Democracy International. Our eligibility criterion was young Tunisians between 18 and 35, given the importance of young people as agents of democratic change, which is emphasized both in the comparative politics literature and in the practical work of NGOs and international donors (see section on Democratic consolidation and civic education). Online data collection took place August 7–20, 2019, approximately 1 month before the first round of the presidential election (September 15) and about 2 months before the parliamentary election (October 6).

Participants for this study were recruited using paid advertisements via the online platforms Facebook and Instagram. We incentivized participants with the opportunity to win 1 of 10 Netflix subscriptions, which is highly valued among Tunisian youth. We deliberately

[6]In online Appendix A (pp. 2–5), we provide a more detailed discussion and evidence to compare Tunisia's transition to other (citizen-led) transitions as well as the role of social media more specifically.

used a nonpolitical recruitment strategy.[7] Our ads were viewed by 3.3 million users across Facebook and Instagram, of whom 180,000 clicked to be directed to a project website: http://tunisiatoday.org/. This corresponds to a click-through rate (CTR) of 5.5% viewing the details of the study.[8] In total, 5,069 participants started a baseline survey and 2,073 finished the first and last question of the survey. As participants were not obliged to respond to all questions of our pre- and post-treatment survey, we have between 2,007–2,346 participants answering the questions used to measure our main outcomes.[9] This translates to a 45.5% completion rate. When looking into the attrition and the random assignment of participants, we find no systematic differences in the likelihood of dropping out across treatments.[10]

Despite the balance in attrition between treatment groups, it should be noted that our sample of social media users, as in other studies, is younger and better educated than non-users, thus limiting the generalizability of the study (Boas, Christenson, and Glick 2020; Mellon and Prosser 2017). In Appendix D (p. 10), we present a comparison of key demographics between our sample and a representative sample of the Arab Barometer 2016, including a subsample of Facebook and Instagram users. The results show that our sample is significantly younger (mean age is 21.5) and more educated (62% have a degree compared to only 37% of representative social media users), more are students (83%) and on average slightly more interested in politics (2.49 vs. 1.97 on a 4-point scale), and more are supportive of democracy (58% vs. 40%).

However, for our purposes these differences are less critical than the internal validity that is enhanced via the randomized experimental design. Moreover, it is also the case that individuals who participate in offline civic education programs differ from nonparticipants in perhaps even more consequential ways, given that participants are often affiliated with groups already active in local or national politics (Finkel 2003). To this extent, our sample is thus likely to have been more heterogeneous than traditional in-person programs, and our recruitment efforts via social media platforms reached many more individuals at the same time.

Experimental Protocol. Figure 2 provides an overview of the experimental protocol.[11] As explained above, once participants clicked on the ads, they were directed to the project website, where a brief explanation about the study was provided. Here, participants were informed about their rights and were asked to consent to take part in the study. Participants first answered several sociodemographic questions and then questions about their support for democracy and whether they are registered to vote. Based on this listing survey, they were then randomly allocated into four different online educational courses (experimental arms: T1–T3, P). Balance tests presented in Appendix C.2 (p. 9) show no significant differences between the treatment groups and the placebo group, with the exception of the variable *other unemployment*. The automated randomization process further stratified respondents by gender, given the significant differences observed between men and women in political interest, political preferences, and turnout.

After randomization, participants were invited to participate in an online educational course on the topic of their treatment arm (T1–T3, P), which is explained in more detail below. Once they finished the course, they were asked to answer a post-treatment questionnaire to obtain responses on a series of key political attitudes and self-reported behaviors. Participants took approximately 25 minutes to complete the listing questionnaire, watch the intervention videos, and complete the post-treatment survey.

Experimental Treatments. To achieve our main objective, we implemented four experimental arms, where each arm consisted of a set of three videos of approximately 3 minutes each. All videos and associated online material were newly designed and based on existing offline content, drawing on the experience of our partner, the NGO Democracy International. We

[7] See Appendix B (p. 6) for example ads.

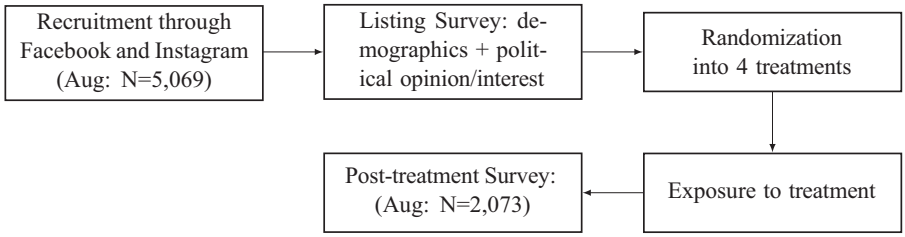
[8] This CTR is higher than those documented in existing studies using the same platforms, which ranged from 0.07 to 3.8% (Samuels and Zucco 2014; Jäger 2017).

[9] Power calculations suggested 20,000 observations to be powered at the 85% significance level for treatment comparisons. Our results therefore present a conservative test of our hypotheses.

[10] Completion rate varies between 45% for T2 and 49% for T3; 47% of the placebo group remained in the study. There is hence no substantive difference in dropout rates among treatment groups. Using a regression analysis, Table A.1 of Appendix C.1 (p. 7) shows that there are no systematic differences in attrition rates across the treatments. Figure A.4 (Appendix p. 8) further presents a detailed balancing test of dropouts and those who completed the study. We note some systematic differences of the two groups, as more educated individuals, those more supportive of democracy, and those already registered were more likely to complete the study. Hence, our estimates are likely to reflect a lower bound of the average treatment effects. To account for these differences, our regression analysis considers all pre-treatment variables shown in Figure A.4 (p. 8) as covariates.

[11] The study was preregistered on the AEA RCT registry on August 5, 2019, prior to data collection (https://www.socialscienceregistry.org/trials/4509/history/51329). In Appendix G (pp. 16–19), we outline divergences between the preregistration and the final analysis.

FIGURE 2 Summary Experimental Design (August 2019)



Note: This figure provides an overview of the recruitment of participants, data collection and exposure to experimental treatments.

developed initial content and pretested the interventions in early June 2020 on a pool of 2,500 Tunisian Facebook participants. We considered the feedback obtained by pilot participants and adapted the baseline questionnaire and video content based on a quantitative and qualitative evaluation of the pilot data. The final English-language transcripts and links to the videos can be found in Appendix E (p. 11).

To ensure a shared, basic understanding of democracy, all treatment group respondents (but not those in the placebo group) were first exposed to an initial video that provided an overview of democracy by discussing features of democratic regimes, such as free expression, access to unbiased information, rights to free assembly, and free elections with competitive political parties, as opposed to features of autocratic regimes, such as restrictions on political opposition, the mass media, and civil society, and where individuals were not free to vote for their preferred candidates "without limitations, corruption, or fear."[12] Following this introductory video, respondents were exposed, depending on their assigned treatment group (T1-T3), to two subsequent videos emphasizing the three different democracy frames derived from the theoretical discussion above. The **placebo group's (P)** videos consisted of stock footage of wild animals found in Tunisia along with efforts made over the years to protect and conserve Tunisian wildlife in order to account for potential Hawthorne effects.

Videos for the first treatment, the *democracy gain frame (T1)*, emphasized mainly positive aspects of the new democratic regime, for example, by showing images of the Tunisian parliament and judicial tribunals with voice-overs describing the new democratic state "ruled by law," where individuals are all "equal before the judiciary," with rights of free expression and the ability of individuals to hold political elites accountable by voting or other forms of political behavior. By contrast, videos for the second treatment, the *democracy loss frame (T2)*, emphasized the negative aspects of the previous autocratic regime, with images of individuals being arrested, subjected to show trials, and tortured, along with testimonials from actual victims of the Ben Ali regime, and the depiction of Ben Ali's electoral "victories" with upwards of 98% support as intrinsically undemocratic. Finally, videos for the third treatment, the *democratic self-efficacy frame (T3)*, showed maps and cell phone images with voice-overs describing how text reminders may be obtained to provide information on where individuals will vote, the eligibility criteria, and necessary documents for registration and voting, and exhorting individuals to develop a specific plan for when and how they will travel to the voting center and cast their ballots.

One limitation of the study is the short-term nature of the effects we are able to assess. Nevertheless, some framing interventions in other fields have been shown to be very impactful, despite similarly short exposure to messages, for instance, on blood donation (Chou and Murnighan 2013) and drinking behavior (Gerend and Cullen 2008). Indeed, some of these interventions have proven to have lasting effects even 100 days after exposure, as Asensio and Delmas (2016) show with framed messages encouraging energy conservation. Moreover, while we are able to assess only the short-term effects of our interventions, we are at the same time able to ensure no variation of content and its quality within treatments. This is in contrast to field interventions on civic education, where facilitators with different abilities make it more difficult to disentangle the impact of the intervention's content from the facilitator's effect.

Outcome Variables

We assess the impact of the online civic education treatments on a range of outcomes commonly associated

[12]We note that exposing all treatment groups to one pro-democracy video meant that the time that subjects were exposed to particular democracy frames was a maximum of 6 minutes. This undoubtedly attenuated the effects that might have obtained from exposure to three similarly framed videos.

with democratic political culture (Almond and Verba 1963). We focused on two broad sets of outcomes. We included a set of outcomes related to *evaluations of political regimes*, given decades of research showing the importance of democratic regime support for the consolidation and stability of democratic regimes (Claassen 2020; Easton and Dennis 1969; Rose, Mishler, and Haerpfer 1998). Following Mattes and Bratton's (2007) "demand and supply" model of democratic support, we include measures related to evaluations of democratic regimes and non-democratic alternatives ("demand"), as well as perceptions of democratic performance that democracy is being adequately "supplied" by the Tunisian regime and its political institutions.

We also included a set of outcomes related to political engagement, given the centrality of political participation and behavioral orientations for democratic citizenship (Verba, Schlozman, and Brady 1995). These measures include political efficacy and a series of items related to registration and voting intentions, and participation in other ways in the ongoing campaign and the electoral process.[13] Table 1 summarizes our measures.[14]

Ethics

Ethical approval was obtained prior to data collection on July 17, 2019, from the Research Ethics Committee of the Business School at Middlesex University London (approval number 7673). Participants were informed about their rights, confidentiality, and time involvement, and only participants who consented to be part of our study proceeded to the initial survey and subsequent treatments. The research team worked with fully anonymized data throughout the study.

Results

To test our hypotheses, we run two types of models. First, we compare the impact of receiving any online civic education treatment to the placebo group. Tables 2 and 3 present the results for our various outcome variables where all treatments have been aggregated, testing Hypothesis 1 (H1). Second, we estimate the separate impact of each treatment group compared to the placebo group, testing Hypotheses 2 and 3 (H2 + H3). We also conduct joint hypothesis tests to determine the extent to which effects differ between treatment arms across the outcomes. The results of these regressions are presented in Tables 4 and 5. All outcome and control variables were standardized to range from 0 to 1 to allow for coefficient comparison. Robust standard errors are reported for all tables.

In all regressions, we allow the number of observations to vary according to the missing values in the dependent variable. For categorical covariates, missing values were replaced with zeros, and a dummy variable was added in the model to identify those cases whose values were replaced. Our main conclusions do not change if we apply listwise deletion of missing values for all models.

Comparing Any Type of Online Civic Education Treatment to Placebo

We start by comparing all treatment arms with the placebo (control) group. Table 2 presents the impact of the treatments on evaluations of political regimes (M1–M4) and Table 3 on political engagement (M5–M8). We use a question on animal protection as a placebo question (M0). Tables 2 and 3 confirm that exposure to any of the online treatments has largely the expected impact. Overall, the treatments were highly effective at changing behavioral intentions, and somewhat effective at changing democratic values. In Table 2, M2 confirms that exposure to these interventions has a negative impact on support for autocracy (demand side). Treated participants reported approximately 4 percentage points lower levels of support for the Ben Ali regime. Similarly, the treatments also increased by 4 percentage points the rating for the current regime's democratic performance (supply side). In both cases, the treatment effects are equivalent to a 7 percentage point change in level relative to the placebo group. Appendix F (p. 12) shows that for M2 and M4, the impact of the interventions is stronger than the difference between men and women and about the same impact as being employed. We find no impact of our treatments when rating the "current regime of elections and multiple parties" (M1) or different forms of non-democratic regime alternatives (M3).

In Table 3, we examine the impact of the treatments on different forms of political participation (M5–M7). The results suggest that the treatments positively affect all the behavioral outcomes aside from reported

[13]These measures are indicators of behavioral intentions, as opposed to measures of actual or validated political participation. This is an unavoidable limitation in the study given the lack of post-election follow-up interviews.

[14]The local Democracy International team in Tunis translated the questionnaire in Arabic and French. Participants had the choice of completing the questionnaire in English, French, or Arabic.

TABLE 1 Outcome Variables: Interval-Level Measures

Measure	Question	Minimum Value	Maximum Value
Evaluations of Political Regimes			
Democratic regime evaluation	Rating of current political system of elections and multiple parties	0 = worst possible	1 = best possible
Authoritarian nostalgia	Rating of the Ben Ali regime	0 = worst possible	1 = best possible
Support for non-democratic regime alternatives	The army comes in to govern the country.	0 = strongly disapprove	1 = strongly approve
	Elections and the national assembly are abolished so that the president can decide everything		
	Only one political party is allowed to stand for election and hold political office		
	A system governed by Islamic law without elections or political parties		
Regime democratic performance	Rating that Tunisia is nowadays a democracy	0 = complete dictatorship	1 = complete democracy
Political Engagement			
Vote intention	Likelihood of voting in the next election	0 = not likely at all	1 = extremely likely
Intention to register	Likelihood of registering to vote in future elections	0 = not likely at all	1 = extremely likely
Campaign participation	Likelihood of participating in the upcoming election other than voting (e.g., attend rally, help candidate, share political information on social media)	0 = not likely at all	1 = extremely likely
Political competence/efficacy	I feel well prepared to participate in political life	0 = strongly disagree	1 = strongly agree
Animal Protection			
Animal protection	Importance to you that animals are protected in their natural habitats	0 = not at all important	1 = absolutely important

Notes: Table shows the description of the main outcomes analyzed in this section.

TABLE 2 Treatment Effects: All Treatment Groups versus Placebo on Regime Evaluations

	Placebo Question	Evaluations of Political Regimes			
	Animal Protection M0	Democratic Regime Rating M1	Ben Ali Regime Rating M2	Non-democratic Regime Alternatives M3	Regime Democratic Performance M4
Treatment	−.000	.014	−.041*	−.004	.040**
	[.014]	[.015]	[.016]	[.011]	[.012]
Pre-treatment controls	√	√	√	√	√
Observations	2,007	2,190	2,197	2,203	2,346
R^2	.086	.068	.062	.118	.041
Control mean	.844	.511	.427	.259	.534

Notes: Table presents OLS estimates with robust standard errors. All treatment groups (gain, loss, and practical) were pooled together and compared to the placebo group. Dependent variables were standardized to range from 0 to 1. All models control for the following pre-treatment variables: gender, age, education, employment status, prior registration status, prior support for democracy, interest in political matters, and animal-related matters. The full set of results are reported in Appendix F (p. 12).
$^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$.

likelihood of voting in the upcoming 2019 elections using the full sample of respondents (M5). Treated participants reported 3 to 4.5 percentage points higher intentions of registering (M6) and engaging in campaign-related behaviors (M7) (e.g., working for a candidate or attending a rally) than their nontreated counterparts (M7), equivalent to 4 and 14% more than the placebo group.

Because our treatments cannot change intentions to register for those participants who are already registered, we present M6 in Table 3 for the individuals who reported no prior registration to vote or did not know whether they were registered. We also present a model for the same subsample for M5, voting intention. For nonregistered individuals, the treatment effect is 8 and 5.9 percentage points on registration and turnout (M6∗

TABLE 3 Treatment Effects: All Treatment Groups versus Placebo on Political Engagement

	Political Engagement					
	Turnout		Registration		Campaign	Political Efficacy
	M5	M5*	M6	M6*	M7	M8
Treatment	.013	.059*	.031†	.080**	.045**	.051**
	[.015]	[.027]	[.016]	[.028]	[.017]	[.014]
Pre-treatment controls	√	√	√	√	√	√
Observations	2,083	848	2,050	830	2,069	2,342
R^2	.266	.112	.185	.105	.067	.142
Control mean	.706	.488	.704	.566	.328	.563

Notes: Table presents OLS estimates with robust standard errors. All treatment groups (gain, loss, and practical) were pooled together and compared to the placebo group. Dependent variables were standardized to range from 0 to 1. All models control for the following pre-treatment variables: gender, age, education, employment status, prior registration status, prior support for democracy, interest in political matters, and animal-related matters. M5∗ and M6∗ are models of turnout and registration for only those participants who were not previously registered to vote or did not know whether they were registered. The full set of results are reported in Appendix F (p. 12).
$^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$.

TABLE 4 Comparing Treatment Groups versus Placebo on Regime Evaluations

	Placebo Question	Evaluations of Political Regimes			
	Animal Protection	Democratic Regime Rating	Ben Ali Regime Rating	Non-democratic Regime Alternatives	Regime Democratic Performance
	M0	M1	M2	M3	M4
T1: Gain	−.015	.028	−.022	−.005	.026†
	[.018]	[.019]	[.020]	[.013]	[.015]
T2: Loss	−.000	.009	−.069**	.003	.039**
	[.018]	[.018]	[.020]	[.013]	[.015]
T3: Practical	.015	.005	−.032	−.010	.055**
	[.017]	[.019]	[.020]	[.013]	[.015]
Pre-treatment controls	√	√	√	√	√
Observations	2,007	2,190	2,197	2,203	2,346
R^2	.088	.068	.065	.119	.043
Control mean	.844	.511	.427	.259	.534

Notes: Table presents OLS estimates with robust standard errors. Dependent variables were standardized to range from 0 to 1. All models control for the following pre-treatment variables: gender, age, education, employment status, prior registration status, prior support for democracy, interest in political matters, and animal-related matters.
†$p < .10$, *$p < .05$, **$p < .01$.

and M5∗), respectively, equivalent to 14 and 12% higher than the placebo group, both substantively large effects.[15]

We also confirm that the online civic education treatments have a positive, significant impact on respondents' feeling of political efficacy (M8)—about 5 percentage points higher for treated participants, or approximately 9% more in level than the placebo group. As expected, we find no differences between our treatment and placebo groups on nonpolitical outcomes (M0).

Overall, we find strong support for Hypothesis 1. Being exposed to online civic education reduces nostalgia for the previous regime, has positive effects on ratings of the current regime's democratic performance, increases political efficacy, and increases intentions to register, vote, and become more active in campaign-related political behavior.

Comparing Different Types of Online Civic Education Treatments

We next investigate whether the three different treatments have differential effects on the outcome variables, and whether the differences conform to the theoretical expectations outlined above. In Tables 4 and 5, we report the coefficients for each model, which are based on similar models as presented in Tables 2 and 3, but instead of bundling the treatment groups together, now each treatment is considered separately. Table 6 presents the results of joint hypothesis tests across the full range of outcomes (M1–M8) between different treatment arms, as well as tests of the equality of effects across the different blocs of outcomes (Evaluations of Political Regimes, Political Engagement) for the different treatments.[16]

We turn first to the impacts of treatments derived from prospect theory, democratic gains (T1) and losses (T2). In Table 4, it can be seen that for demand-side democratic values (M1–M3), only the loss frame (T2) has significant impacts. Exposure to the videos emphasizing democratic loss led to significantly lower ratings

[15]The unadjusted coefficients without pretreatment covariates are presented in Appendix Table A.4 (p. 14). As expected, the coefficients are virtually the same with slightly larger standard errors.

[16]These joint tests are constructed using Wald tests, where we test the equality of effects across M1–M4, M5–M8, and M1–M8.

TABLE 5 Comparing Treatment Groups versus Placebo on Political Engagement

	Political Engagement					
	Turnout		Registration		Campaign	Political Efficacy
	M5	M5*	M6	M6*	M7	M8
T1: Gain	.017	.056†	.029	.075*	.051*	.052**
	[.018]	[.032]	[.020]	[.034]	[.021]	[.017]
T2: Loss	.021	.072*	.021	.061†	.057**	.045**
	[.019]	[.034]	[.019]	[.035]	[.021]	[.017]
T3: Practical	.001	.051	.043*	.103**	.027	.056**
	[.019]	[.034]	[.019]	[.034]	[.021]	[.017]
Pre-treatment controls	√	√	√	√	√	√
Observations	2,083	848	2,050	830	2,069	2,342
R^2	.266	.112	.185	.106	.069	.143
Control mean	.706	.488	.704	.566	.328	.563

Notes: Table presents OLS estimates with robust standard errors. Dependent variables were standardized to range from 0 to 1. All models control for the following pre-treatment variables: gender, age, education, employment status, prior registration status, prior support for democracy, interest in political matters, and animal-related matters. M5∗ and M6∗ are models of turnout and registration for only those participants who were not previously registered to vote or did not know whether they were registered.
†$p < .10$, *$p < .05$, **$p < .01$.

for the former Ben Ali regime. For the supply side, rating of the perceived democratic performance of the current regime (M4), participants across both treatments reported higher ratings than the control group. Both prospect theory treatments have significant effects on *each* of the engagement variables, shown in Table 5, including registration and turnout among those not previously registered, campaign behavior, and political efficacy.[17]

[17]The unadjusted coefficients without pretreatment covariates are presented in Appendix Table A.5 (p. 15). As in Tables 2 and 3, the coefficients are virtually the same with slightly larger standard errors.

TABLE 6 Comparison of Treatment Groups versus Placebo (P-values of Joint Tests)

	Evaluation of Political Regimes	Political Engagement		All Political Outcomes
	(M1–M4)	(M5–M8)	(M5*, M6*, M7, M8)	(M1–M8)
T1 vs. T2	.0433	.9449	.9203	.2293
T1 vs. T3	.1313	.3392	.5825	.1649
T2 vs. T3	.1008	.0816	.1732	.0472
PT vs. Placebo	.0101	.0019	.0005	.0004
PT vs. T3	.1410	.0820	.2085	.0626

Notes: Table presents p-values of Wald tests comparing treatment group with placebo. T1 refers to gain, T2 to loss, and T3 to practical treatments. PT refers to prospect theory frames (T1 and T2).

Although both prospect theory frames have generally positive effects across the range of dependent variables, examination of the relative magnitude of the effects provides initial support for the expectation in Hypothesis 2 that framing democracy in terms of *loss* will have greater impact than frames in terms of *gains*. In 4 out of 6 outcomes where we observe significant impacts of the prospect theory frames, the effects of T2 are significantly larger in magnitude than those of T1. We observe significant differences in particular for ratings of the Ben Ali regime (percentage increases over placebo of 16 for T2 compared to 5 for T1), ratings of the current regime's democratic performance (7 to 5), turnout for those not previously registered (15 to 11), and campaign participation (17 to 15).[18] Testing the joint differences between these treatment arms more formally, Table 6 shows that across all outcomes (M1–M8), the null hypothesis of equal effects cannot be rejected. But significant differences do emerge on the bloc of variables corresponding to the evaluation of political regimes ($p < .05$), arguably the set of outcomes most linked to the "loss" of democracy that T2 was designed to affect. Overall, Hypothesis 2 receives qualified support.

The effects of the practical self-efficacy frame (T3), on the other hand, are significant in only 3 of the 8 individual outcomes.[19] However, its impacts on registration and political efficacy are significantly larger than those observed under either prospect theory frame. This supports Hypothesis 3 in that videos emphasizing the practical frame had the largest impact on two of the main outcomes that it was designed to influence. T3 affected none of the general democratic regime support measures aside from the assessments of the current regime's democratic performance, nor do we find statistical evidence to support the impact of the practical treatment on turnout. Moreover, joint hypothesis testing shows that, across all outcomes, the practical frame had weaker effects than the prospect theory frames taken together, and weaker than the loss frame in particular. Overall, then, the results provide partial support for Hypothesis 3.

[18]This conclusion holds when we account for a multiple testing correction using the Benjamini-Hochberg (BH) procedure, where loss has greater impact in 3 of the 4 instances where PT differences exist. The BH controls for the proportion of incorrect rejections of null hypotheses. The correction consists of calculating a rejection threshold to compare empirical p-values. Under the BH correction, all null hypotheses having an empirical p-value lower than the rejection threshold are rejected. In our case, the BH used for the comparison of effects within the same regression considered 40 hypotheses (eight models and the five hypotheses shown in Table 6). For further details on the BH correction, see Benjamini and Yekutieli (2001).

[19]This conclusion remains after considering the BH correction explained in note 18.

Conclusion and Discussion

We assessed whether online civic education can be effective in fostering democratic values and political engagement, and thus contribute to the resilience of new democracies against autocratization. Using Tunisia as a case study, where democracy emerged in 2011 after more than 50 years of autocratic rule, we investigated the effects of several online civic education interventions targeted toward youth. We recruited over 2,000 individuals from social media platforms and randomly assigned them to one of four treatment conditions. Three treatment groups were exposed to different aspects of democracy and democratic citizenship, with alternative frames being derived from prospect theory (Tversky and Kahneman 1986) and self-efficacy theory (Bandura 1997). The fourth group received a treatment related to animal preservation in Tunisia.

The results showed that a series of outcomes related to democratic political culture can be altered—at least in the short term—from exposure to online civic education. Individuals in the treatment groups were significantly more likely to rate the previous Ben Ali regime more negatively than the placebo group, as well as evaluating the democratic performance of the current Tunisian regime more positively. In terms of political engagement, treated individuals increased significantly on political efficacy relative to the placebo group, and they reported a greater likelihood of registering to vote in upcoming national elections and participating in other forms of campaign-related behaviors. Further, behavioral intentions were more pronounced among those not previously registered to vote; among this group, intent to register and vote in the 2019 elections increased by 8 and 6 percentage points, respectively.

When comparing the set of effects between treatments, we found evidence that emphasizing democratic *loss* was more effective than emphasizing democratic *gain* in reducing nostalgia with the previous regime in particular. More generally, both the loss and gain frames, rooted in the logic of prospect theory, proved more consistently effective across the range of outcomes we examined than a frame promoting democratic citizenship by emphasizing self-efficacy and the practical steps needed to participate in politics. At the same time, the practical information frame did result

in changes in political efficacy and intent to register, two of the outcomes it was explicitly designed to influence.

Our findings have important implications for theories of civic education and democratic change, and point to new directions and possibilities for the future delivery of civic education in emerging democracies. Theoretically, the article reinforces the positive conclusions from the now sizable literature on the democratic effects of face-to-face civic education programs or those delivered via more traditional mass media (Finkel 2003; Gine and Mansuri 2018; Paluck and Green 2009). Short-term online interventions *can* foster change in supportive democratic attitudes and participatory orientations, even interventions of relatively short duration consumed privately by individuals without direct guidance from facilitators.

Moreover, these positive effects can potentially be achieved on a much greater scale in the online environment, relative to the few individuals exposed to a given face-to-face intervention. With more refined interventions and improved mechanisms for retaining individuals from initial clicks to the completion of an online program, even greater numbers of individuals can be exposed to democratic messages in a relatively cost-effective manner. In this way, the positive effects of civic education in the offline environment may be amplified online, and even small changes from a given intervention may aggregate into large-scale attitudinal and behavioral change through the massive reach of contemporary social media platforms. In this sense, our study joins those arguing for the potentially *positive* benefits of social media for democracy (Diamond 2010); providing appropriate content via those platforms can foster the development of democratic orientations and participation among youth and perhaps other groups prone to apathy and withdrawal from politics.

Several of the more specific results are also theoretically compelling, while at the same time pointing to the need for more definitive evidence to be uncovered in future research. First, the finding that treatments derived from prospect theory had more consistent impact than the self-efficacy treatment suggests that furthering democratic values and engagement in new democracies depends not only on practical knowledge about democratic procedures but also on more general awareness of the benefits and losses associated with democratic and autocratic regimes.

Second, the finding that individuals exposed to the *loss* treatment, which emphasized the negative aspects of the previous regime in terms of human rights and democratic freedoms, showed the largest decrease in authoritarian support among the three treatment groups is a promising theoretical finding, not only in further validating the expectations of prospect theory, but more generally in supporting the potential role that civic education may play in preventing backsliding based on individuals' nostalgia for idealized aspects of a country's autocratic past (Neundorf and Pop-Eleches 2020). Future research should attempt to confirm these effects by presenting individuals with additional and more nuanced frames distinguishing democratic losses from gains.

Third, the stronger effects we found from civic education messages among those who were not previously registered to vote support the view that civic education may serve to compensate for individuals' lack of preexisting political resources or, in other words, help promote democratic participation and supportive democratic attitudes among those with the greatest "need" (Neundorf, Niemi, and Smets 2016). The opposite pattern has been found in some previous civic education research as well (Gottlieb 2016; John and Sjoberg 2020), and it is of critical importance, both theoretically and in terms of the design and implementation of future interventions, to understand more about how and under what conditions online civic education can best be delivered in order to maximize its potential compensatory benefits.

Of course, our focus here on a single country raises the important question of the generalizability of the findings. As noted above, the Tunisian results parallel many of the positive findings from previous offline civic education research. To this extent, Tunisia represents a confirmatory case from an important region of the world where little work on the effects of these kinds of interventions exists. At the same time, we note several aspects of the study that potentially limit the scope of the findings. Our application of prospect theory, and in particular the focus on losses associated with previous authoritarian regimes, implies that our findings are necessarily limited to new democracies where conditions in pre-transition autocracies are still relatively salient. Similar effects of the loss frame may not obtain in either long-standing democratic or autocratic systems where citizens do not have direct experiences with both democracy and its alternatives. It is also the case that internet access and social media usage is very high among Tunisian youth; in countries with a smaller tech-savvy youth cohort, it may prove more difficult to recruit and retain subjects, and sample biases may be even more severe. Future research should therefore replicate the study design in other countries to test the robustness and generalizability of our findings.

In sum, we have shown initial evidence that online delivery of civic education has the potential to be a transformative means for promoting supportive political

culture in new democracies. But there is still much that remains unknown. It is unclear, for example, how long-lasting the effects generated through online civic education delivery are, and how the half-life of online effects may differ from their offline counterparts. Another critical feature of the present study is that, whereas recruitment to the intervention was done through advertisements placed on Facebook and Instagram, the study itself was conducted outside of those platforms on its own self-contained website. It remains to be seen whether online civic education messages that are directly embedded within individuals' "feeds" on platforms such as Facebook or Twitter might produce even greater amplification via retweeting and other online peer-to-peer sharing processes. Alternatively, it may be necessary to change the length of the videos or the incentives provided in order to induce participants to remain engaged within those platforms with content for as long as we were able to achieve in this study. As we learn more about these issues in future work, the ways that the enormous potential of online civic education can best be exploited to foster attitudinal and behavioral change in new democracies will come into clearer focus.

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Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix A: Tunisia as a case study
Appendix B: Recruitment ads
Appendix C: Balance tests
Appendix D: Sample comparison with Arab Barometer IV - Pre-treatment variables only
Appendix E: Treatment videos and English transcripts
Appendix F: Treatment effects: Display of all covariates for Table 2
Appendix G: Divergences between pre-registration and final paper