

# The Fundamental Determinants of Anti-Authoritarianism

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March 2017

## Abstract

Which fundamental factors are associated with individuals holding democratic, anti-authoritarian ideologies? We conduct a survey eliciting Hong Kong university students' political attitudes and behavior in an ongoing pro-democracy movement. We construct indices measuring students' anti-authoritarianism, and link these to a comprehensive profile of fundamental economic preferences; personalities; cognitive abilities; and family backgrounds. We find that fundamental economic preferences, particularly risk tolerance and pro-social preferences, are the strongest predictors of anti-authoritarian ideology and behavior. We also study simultaneously determined outcomes, arguably both cause and consequence of ideology. Examining these, we find that anti-authoritarians are more pessimistic about Hong Kong's political outlook and about their fellow students' support for the movement; their social networks are more political; they consume different media; and, they are more politically informed than other students. Our extraordinarily rich data suggest that individuals' deep preferences should be considered alongside payoffs and beliefs in explaining political behavior.

**Keywords:** Political movements, ideology, preferences

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# 1 Introduction

For over two hundred years, people worldwide have taken to the streets and demanded democratic political change from authoritarian rulers. In this, they have sometimes been successful (e.g., the velvet revolution, in 1989), and sometimes not (the Tiananmen Square protests in the same year). Anti-authoritarian movements remain relevant today: according to the human rights NGO Freedom House, 56% of the world’s population lived in a state classified as either “partly free” or “not free” in 2015; 26% of the world’s population — nearly two billion people — lived in states classified as “not free.”<sup>1</sup> The outcomes of anti-authoritarian movements thus have the potential to shape the welfare of billions of individuals, as well as the wealth of nations.<sup>2</sup>

In this project, we aim to identify and understand the *anti-authoritarians*: individuals who demand fundamental political rights and participate in political movements against an authoritarian regime.<sup>3</sup> We conduct a survey of over 1,500 university students in Hong Kong — a group of individuals at the heart of the Umbrella Revolution of 2014 and an ongoing struggle for democracy and self-determination against the ruling Chinese Communist Party (CCP). We collect, to our knowledge, the most comprehensive mapping of demographics, personality, cognitive ability, preferences, and information sources ever collected on a group of potential political actors, and certainly the most comprehensive dataset on actors in an ongoing, high-stakes anti-authoritarian political movement.

An anti-authoritarian ideology can arise from expected payoffs from a successful democratization; from beliefs about the viability of the democratic movement; or from a certain set of preferences. Differences in payoffs, beliefs, and preferences will therefore generate variation in the support for anti-authoritarian movements. In this research, we examine the distinguishing characteristics of anti-authoritarian individuals, taking an explicitly empirical approach.

We aim to identify associations between a large set of “fundamental” individual characteristics and anti-authoritarian ideology. Are anti-authoritarians individuals with particular fundamental economic preferences; personalities; cognitive abilities; or, demographic characteristics? In a second step, we examine other individual characteristics that may vary with anti-authoritarianism

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<sup>1</sup>Data come from Freedom House’s (2016) “Freedom in the World” report, available online at [https://freedomhouse.org/sites/default/files/FH\\_FITW\\_Report\\_2016.pdf](https://freedomhouse.org/sites/default/files/FH_FITW_Report_2016.pdf), last accessed August 5, 2016. By some measures, the world has become less free in recent years: Freedom House introduces its 2016 Report lamenting a “10th consecutive year of decline in global freedom.” There has been an expansion of political freedom over the long run, however: Besley and Persson (2016) show that over the last two centuries, nations have become more democratic.

<sup>2</sup>A large literature in the social sciences has studied the growth consequences of democracy: see, e.g., Przeworski and Limongi (1993); Przeworski et al. (2000); Gerring et al. (2005); Rodrik and Wacziarg (2005); Persson and Tabellini (2006, 2008); Papaioannou and Siourounis (2008); Acemoglu and Robinson (2012); Bates et al. (2012); Meyersson (2016); Acemoglu et al. (2015). Researchers have also looked at democracy’s effects on other outcomes, e.g. health: Besley and Kudamatsu (2006); Blaydes and Kayser (2011).

<sup>3</sup>It is worth noting that anti-authoritarian movements are often, but not always, democratic in their nature. For example, anti-authoritarian movements might demand religious freedoms or the right to self-determination. We thus use the more general term “anti-authoritarian” to describe movements opposed to an autocratic regime, rather than the more specific “democratic”.

— plausibly both cause and consequence. How do the anti-authoritarians’ beliefs about the evolution of political institutions differ from those of others in their polity? How do their sources of media and their social networks differ?

In general, research of this nature is limited by logistical and political constraints. It is difficult in any environment to enlist a large sample of individuals to engage in lab elicitations of the full range of preferences, personalities, beliefs, etc., that may drive political behavior. It is often practically impossible to do so in the midst of a high-stakes political movement against a dictatorial regime. Until recently, restrictions on participants’ political expression and on researchers’ access to movement participants have typically confounded real-time elicitation of ideology and limited the analysis of political behavior in democratic movements to *ex post* analyses (e.g., Kuran, 1989, 1991, 1997; Opp and Gern, 1993; Lohmann, 1994; Beissinger et al., 2015; Aytaç et al., 2017a,b; Doherty and Schraeder, n.d.). Such analyses typically select on the outcome of the movement, and cannot tell us much about preferences and beliefs *prior* to the movement’s ultimate success or failure. Analyses of political behavior in real time are more common in settings that are already politically free (e.g., Gerber et al., 2011); important recent exceptions are Onuch (2014) and Onuch and Sasse (2016), who engage in the real-time study of participants in Ukraine’s EuroMaidan movement.

Hong Kong’s ongoing fight for political rights against the ruling CCP represents a propitious setting in which to study the supporters of a high-stakes political movement prior to the resolution of uncertainty about the movement’s success, and with some guarantee of civil protections that allow scholars to credibly elicit beliefs, preferences, and political behavior. A simple indicator of Hong Kong’s suitability for our research can be found in Freedom House’s measures of freedom. In their 2016 “Freedom in the World” report, Hong Kong had the largest gap in the world between political rights and civil liberties: the civil liberties of Greece and the political rights of Zimbabwe. In Section 3, we provide evidence that Hong Kong students are, indeed, willing to respond truthfully to direct questions about their views on the CCP, democracy, and independence. While Hong Kong citizens’ ability to speak out against the ruling regime is unusual, it is important to note that it is far from unique among non-democracies. Protests are tolerated in authoritarian regimes around the world; indeed, Lorentzen (2013) argues that protests are *useful* to the Chinese Communist Party.

Our survey incorporates a set of elicitations used to measure anti-authoritarianism in Hong Kong. Because the movement against the ruling CCP is multidimensional — combining the desire for free elections and political self-determination with the expression of a Hong Kong identity that is opposed to mainland China — our elicitation is necessarily multidimensional. To measure anti-authoritarianism, we use: (i) direct questions about students’ political attitudes; (ii) self-reported past and planned anti-authoritarian behaviors (e.g., participation in protests); and, (iii) real-stakes, incentivized choices in the context of the survey: dictator game payments to mainland Chinese and other foreigners as an indicator of anti-Chinese identity, and monetary contributions made

to a political party committed to self-determination for Hong Kong (Demosistō).<sup>4</sup> These various measures exhibit a substantial amount of variation across our sample of students, and are nearly always positively, statistically significantly correlated, suggesting that together they allow us to capture a broad, anti-authoritarian ideology. We thus combine the various indicators of anti-authoritarianism into standardized index measures at the individual level following Anderson (2008).

We link our measures of anti-authoritarianism to a broad range of individual characteristics that are plausible deep, underlying drivers. Our survey includes: (i) the incentivized elicitation of fundamental economic preferences (based on Falk et al., 2015), such as risk preferences, social preferences, and preferences for redistribution; (ii) elicitation of individuals' "Big Five" personality traits (Howard et al., 1996); (iii) measures of cognitive ability (university GPA and the Cognitive Reflection Test, from Frederick, 2005); and, (iv) measures of individuals' demographic and background characteristics (age, gender, the social and economic status of their household, the type of high school attended, and the length of time their family resided in Hong Kong).

What distinguishes the anti-authoritarians? First, they are individuals with significantly different fundamental economic preferences compared to other students. Anti-authoritarians are more risk-seeking; more altruistic; more reciprocal; and, they have a stronger preference for redistribution in a series of real-stakes dictator games.

Anti-authoritarians also have different personality traits from other students: examining the Big Five personality traits, anti-authoritarians are significantly more open, but less conscientious than others.<sup>5</sup> When we examine the cognitive abilities of anti-authoritarians, we find that they have significantly higher scores on the Cognitive Reflection Test (Frederick, 2005). On the other hand, their self-reported GPAs are lower, consistent with their commitment of time and energy to the anti-authoritarian movement.

The household and demographic characteristics of the anti-authoritarians also differ from those of other students. Consistent with traditional, class-based models, students from poorer households and with lower anticipated future earnings are significantly more likely to be anti-authoritarian. Examining the demographic characteristics of students, one sees that older students are somewhat more anti-authoritarian than younger students, and that men are more anti-authoritarian than women. Interestingly, having a longer family history in Hong Kong is not strongly associated with anti-authoritarianism.

To determine whether these associations capture multiple predictors of anti-authoritarianism, or merely a single correlated set of traits, we run a "horse race" with all of the fundamental factors included together as explanatory variables. We find that risk preferences, social preferences, anticipated future earnings, and demographic characteristics continue to be powerful predictors of

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<sup>4</sup>All outcomes are coded so that attitudes reflecting the anti-authoritarian position receive more positive values.

<sup>5</sup>Note that "conscientious" in the context of the Big 5 has a somewhat different connotation from its usage in standard language. In the Big Five, an individual with less conscientiousness "has weak control over his or her impulses" — perhaps more commonly thought of as "self control" (see Howard et al., 1996, page 115).

anti-authoritarian ideology even holding the other characteristics fixed. When we examine the explanatory power of the various fundamental characteristics, we find that fundamental economic preferences — particularly risk tolerance, pro-social preferences, and preferences for redistribution — are the strongest predictors of anti-authoritarian ideology and behavior.

These findings are remarkably robust: using responses from a more limited survey conducted in 2015, we replicate our main findings, and also provide evidence of within-respondent consistency. The associations we document challenge the standard economic model of participation in political movements being driven by variation in payoffs and beliefs: our findings suggest that differences in preferences, too, should be taken into account. Our results also suggest that economic preferences should be considered alongside personality traits in attempting to understand fundamental drivers of individuals' political ideology and behavior.

In addition to examining a range of pre-determined individual characteristics, we study how anti-authoritarians differ from other Hong Kong students along dimensions that may be either cause or consequence of their political ideology. Our survey includes: (i) the elicitation of beliefs about future political outcomes in Hong Kong; (ii) incentivized elicitation of beliefs about other individuals' support for anti-authoritarian ideology; (iii) elicitation of social networks and social interactions; (iv) questions about media consumption; and, (v) questions about political interest and knowledge.

We find that the anti-authoritarians are *not* naïve optimists: their beliefs about the evolution of political institutions in Hong Kong are no more optimistic compared with those of other students, and they are no more likely to think that mere protests will bring about democracy. Moreover, anti-authoritarians are more *pessimistic* about other students holding similar anti-authoritarian ideology. Interestingly, the social interactions and media consumption of anti-authoritarians are significantly different from those of other students: anti-authoritarians have friends who are more politically minded and politically active, and with whom they discuss politics more. They also consume more news, from different sources, and have more political knowledge.

These findings contribute to a broad literature examining the determinants of ideology.<sup>6</sup> We join a long line of scholars focusing on the role of deep individual characteristics in shaping ideology and political behavior. In the wake of World War II, social psychologists undertook the study of the "authoritarian personality," aiming to understand the appeal of Fascism (e.g., Adorno et al., 1950). More recently, scholars have intensively studied contemporary links between personality traits and political ideology and behavior (e.g., Block and Block, 2006; Carney et al., 2008; Mondak et al., 2010; Gerber et al., 2010, 2011, 2012; Ha et al., 2013; Schoen and Steinbrecher, 2013; Greene

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<sup>6</sup>This literature has examined, among others, parents' influence (Bisin and Verdier, 2001); peer effects (Sacerdote, 2001, 2011); the role of the media (Strömberg, 2004; DellaVigna and Kaplan, 2007; DellaVigna et al., 2014; Shapiro, 2015); personal experience (Alesina and Fuchs-Schündeln, 2007; Di Tella et al., 2007; Malmendier and Nagel, 2011; Giuliano and Spilimbergo, 2014; Rao, 2013); education (Weber, 1976; Bowles and Gintis, 1976; Friedman et al., 2016; Campante and Chor, 2012; Clots-Figueras and Masella, 2013; Alesina and Reich, 2015; Cantoni et al., forthcoming; Voigtländer and Voth, 2015; Bandiera et al., 2015).

and Robertson, 2016). In addition to personality traits, scholars have examined associations between political ideology and risk preferences (Kam, 2012); sense of control (Littvay et al., 2011); altruism (Zettler and Hilbig, 2010); and overconfidence (Ortoleva and Snowberg, 2015). To this literature, we contribute an examination of a much broader range of factors than assembled in any existing work — including economic preferences, personality, demographics, and beliefs — with some of these factors (such as economic preferences and beliefs) measured in an incentivized manner to increase the credibility of our measures.<sup>7</sup>

We also contribute to research that aims to describe the characteristics of sets of political actors of special interest. Recently, social scientists have studied the individual traits predicting selection into terrorism (Krueger, 2007) and into public service (Dietrich et al., 2012; Dal Bó et al., 2013, 2015). We study another group of great interest: individuals with “democratic values” (Besley and Persson, 2016) who are in the vanguard of an anti-authoritarian movement. In a world in which political freedoms are limited for over half of the population, our aim of understanding *who* demands political change is very high-stakes.<sup>8</sup>

Finally, we contribute to a growing empirical literature on political behavior in Greater China: Lorentzen (2013) highlights the central government’s tolerance of certain types of protests; King et al. (2013) study information control policies that aim at suppressing collective actions. Our focus on Hong Kong citizens’ demands for Western-style political rights is particularly relevant today given rising concern in Hong Kong, mainland China, as well as in Taiwan, over the increasingly assertive and nationalistic policies undertaken by China. Anti-authoritarianism in Greater China seems likely to be an important ideological current in the years ahead; understanding its drivers is thus of interest to both academics and policymakers.

In what follows, we provide a brief overview of Hong Kong’s democracy movement in Section 2. We then describe our survey of students at Hong Kong University of Science and Technology in Section 3. In Section 4, we present our analysis comparing the fundamental characteristics of anti-authoritarians with other students in our sample. In Section 5, we examine associations between anti-authoritarianism and additional variables of interest that might be both cause and effect of students’ ideology. Finally, in Section 6, we discuss lessons from our descriptive exercise and directions for future work, then conclude.

## 2 Hong Kong’s democracy movement

Prior to 1997, Hong Kong was a British colony, with limited democratic political rights, but strong protections of civil liberties and respect for the rule of law. In 1997, Hong Kong was returned to

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<sup>7</sup>In recent work, Falk et al. (2015) elicit fundamental economic preferences around the world; we demonstrate that these elicited preferences indeed have explanatory power in predicting high-stakes behaviors.

<sup>8</sup>Our project complements the existing theoretical and empirical literature on the extension of the franchise (e.g., Acemoglu and Robinson, 2000; Lizzeri and Persico, 2004; Llavador and Oxoby, 2005; Acemoglu and Robinson, 2006; Aidt and Franck, 2012, 2015), which typically considers aggregate behavior, rather than individual behavior.

the People's Republic of China, to be ruled as a Special Administrative Region with its own quasi-constitution — the “Basic Law” — and a promise from China that its legal, economic, and social traditions would be respected and maintained until 2047, under a policy known as “one country, two systems.” While the “Basic Law” and “one country, two systems” provide a structure for Hong Kong's political and legal institutions, there remain a great many details that have been bargained and battled over between the so-called “pan-democracy” and “pro-Beijing” camps — and, of course, with Hong Kong's rulers in Beijing.

Hong Kong's ongoing democratic movement, expressed most dramatically in the “Umbrella Revolution” of 2014, has its roots in debate regarding the method of selection of Hong Kong's Chief Executive (the head of Hong Kong's government). Article 45 of the Basic Law of Hong Kong specifies the following regarding the selection of the Chief Executive:

The method for selecting the Chief Executive shall be specified in the light of the actual situation in the Hong Kong Special Administrative Region and in accordance with the principle of gradual and orderly progress. The ultimate aim is the selection of the Chief Executive by universal suffrage upon nomination by a broadly representative nominating committee in accordance with democratic procedures.

While specifying an ultimate aim of universal suffrage, the details of such an election were not specified. In particular, the Basic Law does not state *when* any election employing universal suffrage should take place, nor does it specify the details of “nomination by a broadly representative nominating committee.” From Hong Kong's return to China until today, the Chief Executive has been selected by an Election Committee; currently, the Committee is composed of 1,200 members.

In 2007, the Chinese government indicated a move toward universal suffrage in Hong Kong, with the Tenth National People's Congress stating: “[T]he election of the fifth Chief Executive of the Hong Kong Special Administrative Region in the year 2017 may be implemented by the method of universal suffrage.” The Twelfth National People's Congress followed this in 2014 with the details of implementation:

[T]he principle that the Chief Executive has to be a person who loves the country and loves Hong Kong must be upheld. [...]

A broadly representative nominating committee shall be formed. [...] The nominating committee shall nominate two to three candidates for the office of Chief Executive in accordance with democratic procedures. Each candidate must have the endorsement of more than half of all the members of the nominating committee.<sup>9</sup>

The new election mode would thus have allowed the citizens of Hong Kong merely a choice between two or three candidates, previously vetted by the same nominating committee as before.

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<sup>9</sup>Source: <http://www.scmp.com/news/hong-kong/article/1582245/full-text-npc-standing-committee-decision-hong-kong-2017-election>, last accessed August 7, 2016.

Meanwhile, members Hong Kong's Democratic Camp organized to pressure the Chinese government to establish electoral institutions that adhered to international democratic norms, particularly regarding the nomination process for Chief Executive candidates. A group of citizens formed an organization known as "Occupy Central with Love and Peace" (OCLP), which threatened civil disobedience — an occupation of the Central District of Hong Kong — should Beijing not satisfy their demands. To provide their movement with greater legitimacy, OCLP carried out an unofficial referendum in the summer of 2014, which drew over 700,000 voters. Voters endorsed a proposal that allowed the public to nominate Chief Executive candidates, which Beijing rejected. Voters in the referendum also expressed strong support for a Hong Kong Legislative Council (LegCo) veto of any Beijing proposal that did not satisfy international democratic norms.

As noted above, the Chinese proposal offered only a very limited expansion of democratic rights; OCLP and a broad range of democratic activists were unsatisfied and organized civil disobedience in response to Beijing's proposal. The Hong Kong Federation of Students and the student political organization Scholarism organized a walkout on classes in late September 2014. Hong Kong police used tear gas on students and other democratic activists amassed in Central and Admiralty on September 28, 2014, which led to increased sympathy for the democratic movement among the people of Hong Kong.

Thereafter, a much larger-scale occupation of various sites in Hong Kong was established: the so-called "Umbrella Revolution," named for the ubiquitous umbrellas carried by participants. The Umbrella Revolution persisted for months, being slowly (and generally peacefully) cleared out by police by the end of December 2014. While the movement generated substantial press coverage around the world, it did not alter Chinese policy. The limited electoral reform proposal drafted by the Chinese Communist Party was sent to the Hong Kong LegCo for its approval, where it failed to reach the supermajority required for passage. Thus, in June 2015, the LegCo returned Hong Kong to the *status quo ante* of a Chief Executive appointed by the Election Committee.

Since June 2015, the democratic movement in Hong Kong has both fragmented and radicalized. While in 2014 efforts were coordinated around the demand for popular nomination of Chief Executive candidates and election via universal suffrage, Beijing's intransigence convinced significant components of the democratic movement that only a greater degree of self-rule — even independence — would ensure political rights and Hong Kong citizens' continued enjoyment of civil liberties and rule of law.

Recent encroachments on Hong Kong citizens' civil liberties, including the arrest (alleged kidnapping) of Hong Kong booksellers by the mainland Chinese government, have deepened Hong Kong citizens' fear of the Chinese Communist Party and their sense of a Hong Kong identity very much distinct from — even opposed to — that of mainland China. The result is that Hong Kong citizens and political parties are now much more loudly calling for independence or, more politically correctly, for "self determination." "Localist" violence has occasionally flared; new political parties, such as the student-led Demosistō, have formed and won seats in the 2016 LegCo election



on platforms explicitly calling for self determination.

Thus, Hong Kong’s anti-authoritarian political movement is multi-faceted: fundamentally, like other such movements before it, the anti-authoritarian movement in Hong Kong demands democratic political rights. As it has evolved, it has combined a demand for democracy with a skepticism of mainland China — particularly the CCP — and with a growing sense of a national identity as Hong Kongese, distinct from the Chinese. Thus, when studying anti-authoritarianism in Hong Kong today, one must study this broad bundle of ideologies that together comprise anti-authoritarianism in this setting.

### 3 The HKUST student survey

University communities have long represented a core concentration of participants in anti-authoritarian, democratic movements: from 1848, through 1968, to 1989. Thus, particularly in an early phase of the movement, the question about fundamental determinants of anti-authoritarianism can be answered by studying university students — in Hong Kong as elsewhere. Among the leading groups in the Umbrella Revolution were Scholarism, a non-partisan organization of students, and the Hong Kong Federation of Students. Since the end of the Umbrella Revolution, Scholarism was disbanded; Joshua Wong and Nathan Law, the former leaders of Scholarism and the Hong Kong Federation of Students, respectively, formed a party called Demosistō, with the explicit aim of achieving Hong Kong’s political self-determination.

#### 3.1 Timing and methodology

We conducted our survey in June 2016, sending a recruitment email to the entire undergraduate population of the Hong Kong University of Science and Technology.<sup>10</sup> We received 1,744 completed surveys, achieving a response rate of 19.1% and producing a sample that is broadly reflective of, though not quite representative of, the undergraduate student body of HKUST (see Online Appendix Table A.1).<sup>11</sup> Our analysis will focus on the 1,579 surveys completed by students who were either born in Hong Kong or moved there prior to high school. On average, respondents received HKD\$205, approximately US\$25, for completing the survey.

There are three broad categories of variables that we analyze in this article: *(i)* outcomes: our measures of anti-authoritarianism; *(ii)* fundamental determinants of anti-authoritarianism: these are explanatory variables that are generally fixed and pre-determined, and thus can be taken as

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<sup>10</sup>This survey is part of a larger project measuring the attitudes of Hong Kong university students as political institutions in Hong Kong are contested. The larger project aims at two purposes: first, to describe in the cross section what are the characteristics of anti-authoritarians — that is the purpose of this article. Second, to evaluate the effects of experimental interventions relating to participation in yearly July 1 marches held in Hong Kong (Cantoni et al., 2017). That is a separate project, and for brevity we do not discuss this element of our survey here (information will be provided by the authors upon request).

<sup>11</sup>All of our results are robust to re-weighting our sample to match the composition of the HKUST student body; we discuss this further in Section 4, below.

exogenous with respect to political ideology; and, (iii) simultaneously determined variables — these are political variables of interest that may be both cause and consequence of political ideology, so we analyze them separately from the “fundamental drivers”. All of the survey questions, with their precise wordings, are presented in the Online Appendix, Table A.2.

### **3.2 Outcome variables: measuring anti-authoritarianism**

We use an index composed of multiple measures to capture students’ democratic, anti-authoritarian ideology. We prefer an index as it properly reflects the multifaceted nature of anti-authoritarian ideology in Hong Kong: as noted above, such an ideology may be democratic; it may also aim for political independence from China or local self-determination. The construction of a single index also limits the number of hypotheses we test, reducing the possibility of making a Type I error. To construct our anti-authoritarian ideology index, we standardize the individual components and weight each component by the inverse covariance matrix among the components (our construction of the index follows Anderson, 2008).

We also consider a variety of methods for eliciting ideology: we ask students direct survey questions; we ask about self-reported planned and past political behavior; and, we conduct real-stakes elicitations of ideology within the context of our survey. Note that, for ease of presentation, we re-formulate and recode all questions and answers such that larger response values indicate greater anti-authoritarianism.

In much of our analysis, we will combine all of these measures into a single index variable that we call “anti-authoritarian ideology” (this index is composed of all of the variables presented in Panels A and B of Table A.2). For robustness, we also present analyses in the main text of two other indices that are composed of subsets of the variables in our broader index: one index is based only on students’ responses to direct questions regarding their political ideology (the variables presented in Panel A of Table A.2); the second index is composed only of students’ self reported actual behavior and their actual behavior in real-stakes environments in the context of our survey (the variables presented in Panel B of Table A.2). In the Online Appendix, Table A.3, we disaggregate our broad index of anti-authoritarianism into two narrower ideological components: a “pro-democracy” index (based on variables presented in Category A.1 of Table A.2) and a “pro-independence” index (based on variables presented in Category A.2 of Table A.2). Our analysis of these two narrower ideologies supports our combining them into a single anti-authoritarianism index.

We next describe each component of our broad index, in turn:

#### **3.2.1 Responses to direct survey questions**

Our first measure of students’ anti-authoritarian ideology is simply their responses to direct questions regarding their political attitudes. Specifically, we ask students for their views on the follow-

ing:

**Support for democracy (A.1)** We ask students a set of direct questions regarding their views on democratic political institutions: do students prefer them; do students believe that democracy is good for economic development and living standards; do students prefer more democratic institutions for nominating political candidates; etc.

**Support for Hong Kong's independence (A.2)** Our survey includes a range of questions relating to Hong Kong's independence from mainland China. We ask students about their views on political and economic integration with China; whether students view the Chinese Communist Party as a legitimate ruler of Hong Kong; as well as direct questions regarding preferences for independence and views on the desirability of debate regarding Hong Kong's independence.

**Hong Kong identity (A.3)** We also ask students about their "national identity": do they feel more Hong Kongese or Chinese? Our survey includes four questions regarding cultural identity, national identity, and the importance of Chinese and Hong Kongese identity to each student.

**Unhappiness with the political status quo (A.4)** We also ask students for their views on politics and life in Hong Kong today, and views on how the current political system compares to that of the past. We code responses such that greater unhappiness with the political status quo in Hong Kong is a more positive number.

**Anti-CCP views on current events (A.5)** Our survey includes questions about students' views on recent Hong Kong political events: first, the LegCo's decision to veto the Chinese proposal for the 2017 Chief Executive election; second, the case of Hong Kong booksellers who were arrested (allegedly kidnapped) by Chinese authorities for selling books banned in mainland China. We code responses to these questions so that "anti-Chinese Communist Party" responses — indicating support for the LegCo veto and viewing the arrest of the booksellers as illegitimate — are larger numbers.

An important question regarding the interpretation of responses to direct questions about political ideology is whether students feel comfortable responding honestly to such questions. To determine whether this was the case, we elicit several key dimensions of political ideology that may be considered sensitive using "list experiments" (or, "Item Count Technique"; Raghavarao and Federer, 1979) with the students. The list experiment provides "cover" for the expression of possibly stigmatized attitudes, and allows one to estimate the prevalence of these attitudes at the population level. For each political attitude, we are able to compare population estimates of

adherence to such attitude from our list experiment to population estimates based on direct question about the same attitude to determine whether there exists any stigma or fear associated with expressing that particular attitude.

In Table 1, we present the fraction of our sample expressing support for Hong Kong independence; who consider themselves Hong Kongese; who have a favorable view of the ruling CCP; and, who support the use of violence in pursuit of Hong Kong's political rights. In the left-hand column, we simply present the population estimate of adherence to a political attitude based on direct questions. In the right-hand column, we show the difference between the estimate based on direct questions and the estimate based on the list experiment. One can see that for three of the political attitudes, there is no significant effect of providing respondents with "cover" for expressing their views. Only for the use of violence does the list experiment show a significant difference: it seems that many students in our sample would support the use of violence in order to achieve Hong Kong's political rights, but are afraid to say so when directly asked. That such an extreme attitude is stigmatized is not surprising; it is comforting that attitudes from supporting independence to expressing unfavorable views toward the ruling party are all expressed without significant fear in our setting.

### 3.2.2 Self-reported behaviors and real-stakes decisions

Next, we elicit students' past behaviors in anti-authoritarian protests and activities in the past, as well as their plans to engage in future democratic, anti-authoritarian activities (these variables are presented in detail in Panel B of Table A.2):

**Past protest behavior (B.1)** We ask students about their past participation in a range of past protests and political events (such as the OCLP referendum described above). For simplicity, in this paper, we include participation in the over-arching Umbrella Movement in our measure of anti-authoritarianism, but using any combination of self-reported past political behavior generates the same results.

**Planned democratic voting (B.2)** In addition to asking about past behavior, we ask students about their planned political behavior. The first category of planned behavior was regarding the upcoming LegCo election. We ask students whether they planned to support the Democratic Camp in the upcoming elections.

**Planned future protest behavior (B.3)** We next ask students about their intention to participate in the (then) upcoming July 1 march, a yearly gathering organized by the pro-democracy/localist camp.

**Hong Kong identity revealed through choices in incentivized laboratory games (B.4)** We use laboratory games to elicit national identity (or, discriminatory behavior with respect to other people’s countries of origin) in a revealed preference manner. Each respondent plays both a series of dictator games and a trust game with four different randomly chosen partners who are separately recruited for the purpose of this study (each match can be thought of as a “round” consisting of playing the two types of games).<sup>12</sup> We cross-randomize the identity of matched partners that respondents face in each of the four rounds, and we explicitly inform the respondent about the matched partner’s gender, age, and hometown at the beginning of each round.<sup>13</sup> Each student is matched with recipients from the following four hometowns (matched in a random order, and without repetition): (i) Hong Kong; (ii) Hangzhou, China (one of the richest cities in China); (iii) Guiyang, China (one of the poorest cities in China); and (iv) Sydney, Australia.<sup>14</sup> We measure Hong Kong identity as the difference between the amount allocated to a Hong Kong native in the dictator game or trust game, and the amount allocated to a mainland Chinese in the same game.<sup>15</sup>

**Choice of donation to Demosisto (B.5)** As a final revealed preference indicator of anti-authoritarianism, we use donations to the pro-self determination Demosistō political party. Following students’ provision of their consent to participate in the survey, they were informed about their participation payment and offered the opportunity to contribute a fraction of this participation payment to the newly-formed party.<sup>16</sup> We treat larger contributions to Demosistō as an indicator of anti-authoritarian ideology, though of course a respondent could be anti-authoritarian and less “localist” than Demosistō, or even more extreme, demanding outright independence. Thus, this is a noisy measure of the broader ideology.

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<sup>12</sup>We use dictator games with changing budget sets, modified from Fisman et al. (2007). In each round of the game, the respondent needs to make 11 allocation decisions, choosing to keep a certain number of tokens from her endowment, and passing the rest to her matched recipient. There is a pre-set exchange rate between tokens kept or passed and actual money payments. Online appendix Figure A.1 shows the game instructions we present to students regarding the decisions they need to make in each round (Panel A), and the actual decision-making interface (Panel B). Additionally, we use the standard trust game: in each round, the respondent needs to decide how much of a 20 HKD endowment she wishes to transfer to her partner, with each HKD transferred tripled, and the partner able to return some money back to the respondent. Online Appendix Figure A.2 shows the game instructions we present to respondents regarding the decision they need to make in each round (Panel A), and the actual decision-making interface (Panel B).

<sup>13</sup>Online Appendix Figure A.3 shows the instructions we present to students regarding the 4 rounds of games that they are asked to play (Panel A), and the actual interface in which we present information about the matched recipient at the beginning of each round.

<sup>14</sup>In our survey, we verify that respondents (correctly) believe that Hangzhou citizens are significantly richer than average Chinese, and Guiyang citizens are significantly poorer than average Chinese.

<sup>15</sup>Note that subjects — both anti-authoritarians and others — treated individuals from Sydney very similarly to their treatment of Hong Kong natives. Thus, taking into account the difference for this alternative “out-group” does not affect our results.

<sup>16</sup>Regardless of the decisions to donate to Demosistō, students can still keep 100% of the additional payment they earned from various incentivized components throughout the survey. We did not encourage the donation through matching mechanisms.

In Table 2 we show summary statistics and pairwise correlations for the various categories of outcome variables; within each category, we standardize each component question and sum individuals' standardized outcomes (z-scores), weighting each outcome by the inverse of the covariance matrix of the standardized outcomes (following Anderson, 2008). One can see in the table that the various dimensions of anti-authoritarianism in Hong Kong that we examine are, indeed, positively and nearly always highly significantly associated with one another. Self-reported preferences correspond with past and planned self-reported behaviors, as well as real-stakes choices made in the context of our survey (particularly with choices made in the dictator games). At the same time, it is clear from the table that the ideological dimensions that comprise anti-authoritarianism in Hong Kong are distinct: for instance, financial support for Demosistō — a relatively radical, pro-self determination political party — is less common in our sample than having a broader anti-authoritarian ideology, and in fact this relatively extreme behavior is less strongly correlated with the other variables.

### 3.3 Explanatory variables: fundamental characteristics

The fundamental individual determinants of anti-authoritarian ideology that we consider are: economic preferences, personality, cognitive ability, economic status, and background characteristics. We discuss these variables (presented in detail in Panels C-G of Table A.2) in turn:

**Economic preferences (C)** We elicit a complete profile of students' fundamental economic preferences, covering five dimensions: (i) risk preferences; (ii) time preferences; (iii) altruism; (iv) reciprocity; and, (v) preferences for redistribution.<sup>17</sup> We code these so that risk tolerance, patience, reciprocity, and a preference for greater redistribution are all coded as larger numbers.

**Personality (D)** We elicit individuals' "Big 5" personality traits (Howard et al., 1996). Our survey included 25 questions measuring (i) neuroticism; (ii) extraversion; (iii) openness; (iv) agreeableness; and, (v) conscientiousness.

**Cognitive ability (E)** We measure cognitive ability using the Cognitive Reflection Test (Frederick, 2005), as well students' self-reported GPA (the latter is adjusted for major).

**Economic status (F)** We measure students' economic status using a set of questions regarding their family's economic and social status, as well as questions that provide an indication of students' own projected future incomes. To measure students' households' status, we ask students about their family's household incomes; about their family's real estate wealth; and about their

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<sup>17</sup>Elicitation of risk preferences, time preferences, altruism, and reciprocity is based on Falk et al. (2015). We add an incentivized component based on Eckel and Grossman (2002) to their original risk preferences module (question C.1.3 in Table A.2).

parents' educational attainment. It is worth noting that our HKUST student sample has a reported median household income that is very close to that in Hong Kong as a whole: in our sample, the median reported household income is HKD\$22,500 per month; Hong Kong's Information Services Department indicates that the median monthly domestic household income in 2014 was HKD\$23,500.<sup>18</sup>

Our first measure of students' projected future income is based on an administrative survey of HKUST graduates; the survey provides a measure of income associated with each major, and we assign to each student the median income reported in the HKUST survey for their major. We also directly ask students to project their relative incomes in the future. Using all of these indicators of household and own projected future economic status, we construct an overall measure of students' economic status.

**Background characteristics (G)** We also collect a range of individual demographic characteristics and indicators of students' childhood and household environments. Besides standard demographics (age and gender), we ask students whether they, their parents, or their grandparents were born in Hong Kong, and whether their parents currently reside in Hong Kong. To measure the degree of Hong Kong orientation (as opposed to China orientation) of students' high schools, we asked students whether their high school language of instruction was English. We also measure students' current cultural environment by asking them whether they are atheists or religious. Of course current religiosity might be an outcome of anti-authoritarian ideology and behavior, so this variable should be interpreted with some caution (note that removing it from our broad measure of student background characteristics has no effects on any of our results).

### 3.4 Simultaneously determined variables

Finally, our survey included a range of questions regarding student attitudes, beliefs, and behavior, which might plausibly shape their anti-authoritarianism, or be shaped by it. Because these variables cannot be thought of as fundamental factors affecting ideology, we examine them separately. The broad set of variables we observe that might be cause and effect with respect to anti-authoritarianism are presented in Table A.2, Panels H-M, and are next described in turn:

**Beliefs about politics (H)** We elicit students' beliefs regarding the degree to which Hong Kong's institutions will be integrated into those of mainland China in the near (2025) and distant (2050) future. We also elicit students' beliefs about whether political protests are likely to bring about democratic change. To do so, we elicit the probability of democratic change conditional on no protests occurring; we then elicit beliefs about the probability of protests occurring, and then elicit the probability of democratic change conditional on protests.

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<sup>18</sup>See <http://www.gov.hk/en/about/abouthk/factsheets/docs/population.pdf>, last accessed March 5, 2017.

**Beliefs about HKUST students (I)** We next ask students about their beliefs about *other students'* political attitudes. We ask students to make their best guess of how other participants in the study (on average) answered the questions that they just answered. For example, we elicit subjects' beliefs about how much support there is for the democracy movement among the other respondents. We incentivize the elicitation by paying students according to the accuracy of their guesses.<sup>19</sup>

**Social interactions (J)** Our survey included a range of questions about students' social lives, focused on how social life relates to politics. We asked students whether their closest friends participated in the Umbrella Movement, whether their friends were interested in politics, etc. We also simply count the number of friends at HKUST they listed in response to an open-ended question, and asked whether respondents were currently in a relationship.

**Beliefs about close friends (K)** In addition to asking students about their beliefs about the broader student population's political attitudes, we asked them about their close friends' political attitudes. Note that because we do not have all of the close friends in the sample, we are unable to elicit beliefs about friends in an incentivized manner, as we do not have the truth as a benchmark.

**Media consumption (L)** We ask students how much news media they consume and what their preferred sources are.

**Political interest and knowledge (M)** We ask students directly about their interest in politics, and we also give students an identification test of Hong Kong political figures to measure their knowledge of Hong Kong politics.

### 3.5 Additional outcome variables

**Intensity of political support (N)** A final set of self-reported political attitudes regards individuals' support for relatively extreme actions taken, or potentially taken, by the anti-authoritarian movement. One action was the veto of China's proposed method of selecting the Chief Executive — moderate anti-authoritarians may have viewed the veto as giving up limited democratic rights, while more aggressive members of the anti-authoritarian camp may have viewed it as a principled and necessary action to ensure truly democratic institutions. A second — potential — action is the use of violence in pursuit of Hong Kong's political rights. Because views on these more extreme actions are arguably somewhat independent of anti-authoritarian ideology — one could be both strongly pro-democracy *and* pacifist, for example — we do not include this category of variables in our baseline measure of anti-authoritarian ideology. We include it here to provide

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<sup>19</sup>In eliciting beliefs, we follow Manski (2004), who emphasizes the importance of measuring beliefs in settings with uncertainty (see also Manski and Neri, 2013).



transparency regarding the complete set of attitudes we elicit, and we believe it remains of interest as an additional outcome variable, which we examine below. Note that including this category of attitudes in our measure of anti-authoritarianism does not change any of our findings.

## 4 Fundamental determinants of anti-authoritarian ideology

### 4.1 Explaining anti-authoritarianism with fundamental characteristics

We begin by graphically presenting the relationships between the broad categories of fundamental characteristics and anti-authoritarianism. We measure anti-authoritarianism using our broadest index, combining the outcomes in Panels A and B of Table A.2. The explanatory variables are the categories of fundamental individual characteristics in Panels C-G of Table A.2. In Figure 1, we present binned scatter plots showing each fundamental factor’s relationship with anti-authoritarianism; we also indicate on each plot the slope of the best-fit regression line, as well as the p-value from a test of the slope’s equality to zero. Note that all measures, both of anti-authoritarianism and the explanatory variables, are defined as indices summarizing all component questions, standardized to have mean zero and standard deviation of one in the respondents’ population (following Anderson, 2008).<sup>20</sup> The estimated slopes can therefore be interpreted akin to beta coefficients.

One can see in the top row of Figure 1 (labeled Panel C to match the organization of Table A.2) that economic preferences are strongly associated with an individual’s anti-authoritarianism. Anti-authoritarians are individuals who are more risk-seeking, less patient, and more pro-social across a range of measures (altruism, reciprocity, and preferences for redistribution). In the second row of Figure 1 (Panel D), one can see that personality, too, shapes anti-authoritarianism: more open, less conscientious (in the “Big 5 sense”) people are significantly more anti-authoritarian.

In the third row (Panel E), one sees that higher cognitive ability students are more anti-authoritarian, though anti-authoritarianism is associated with a lower GPA — this may reflect time allocation decisions between schoolwork and political action. In Panel F, one sees evidence consistent with class-based models of the demand for political rights: individuals with lower economic status (their households of origin or their own projected status) are more anti-authoritarian than individuals with higher economic status.

Demographics and background characteristics, too, are significantly associated with anti-authoritarianism. One can see in the fourth row of Figure 1 (Panel G) that men are more anti-authoritarian than women, and older students are more anti-authoritarian than are younger students. Having a more “Hong Kong oriented” upbringing (earlier family arrival in Hong Kong and attending an English language high school) is surprisingly not associated with anti-authoritarianism, nor is religion.

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<sup>20</sup>Only our measures of gender, birth year, and religiosity (religious/atheist) are not standardized.

The binned scatter plots show very strong relationships between fundamental individual characteristics and anti-authoritarianism. We next, in Table 3, disaggregate both the explanatory variables and the outcome variable. First, we examine the relationships between the individual survey questions used to construct our broad indices of fundamental factors and the broad measure of anti-authoritarianism. Then, we disaggregate the outcome index into an index based entirely on direct survey questions (column 4) — arguably the most direct measure of anti-authoritarian political attitudes — and another index based entirely on reported behavior (past or planned) and real-stakes decisions made in the context of our survey (column 5). In addition to making statistical inferences using standard p-values (significance indicated using asterisks), we also present p-values calculated by implementing the false discovery rate (FDR) adjustment developed by Anderson (2008), which reduces the number of “false positives” arising from testing many hypotheses.

One can see throughout Table 3 that our findings in the binned scatter plots are not driven by single measures of our fundamental factors or by a single measure of anti-authoritarianism. Rather, patterns are remarkably consistent and statistically significant examining relationships between narrower sets of variables. For example, our finding of risk tolerance’s association with anti-authoritarianism above holds up whether risk preferences are measured using direct questions or incentivized elicitation (Table 3, Category C.1). And, the association exists whether anti-authoritarianism is measured using only direct questions about ideology, only questions about behavior and real-stakes choices, or the combination of the two. Statistical significance is clear even applying the FDR adjustment, and the magnitude of the relationship is quite large, with a one standard deviation increase in risk tolerance increasing anti-authoritarianism by 0.15 standard deviations.

Moving down Table 3, one can see that in some categories, such as patience (Category C.2) or neuroticism (D.4) individual questions within a category sometimes show differing relationships with anti-authoritarianism measures. These are typically categories in which the broad z-score indices are not significantly associated with anti-authoritarianism. Overall, across fundamental factors, we find the patterns presented in Figure 1 to be remarkably robust to our measurement of either anti-authoritarianism or fundamental individual characteristics. As an additional exercise, we disaggregate our index of anti-authoritarianism into a “pro-democracy” index and a “pro-independence” index. We find that associations between individuals’ characteristics and these more specific ideologies very closely match those found using the broader anti-authoritarian index (see Online Appendix Table A.3).<sup>21</sup>

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<sup>21</sup>We also examine the associations between individuals’ characteristics and an index measuring individuals’ support for an “aggressive approach” to anti-authoritarianism (the wording of questions can be found in Online Appendix Table A.2, Panel N); again, the associations are broadly similar to those found using our baseline index (see Online Appendix Table A.3). The one major exception is that very aggressive anti-authoritarians have much less “agreeable” personalities, as one might expect.

## 4.2 Robustness exercises

A basic question about our findings thus far is whether non-random selection into our survey sample plays an important role in generating our results. To assess this concern, we re-weight our sample's observations to match the composition of the HKUST undergraduate population. We regress our broad anti-authoritarianism index on each of the fundamental factors (summarized using z-score indices) one at a time, but weighting each observation in our sample by the inverse of the response rate for that observation's gender  $\times$  cohort  $\times$  school cell. Reassuringly, we find that the signs, magnitudes and statistical significance of the fundamental factors' relationships with anti-authoritarianism are almost identical to our baseline estimates (see Online Appendix Table A.4).

While all of the associations here should be interpreted as such — and not as causal effects — one still might wonder whether experience in Hong Kong's anti-authoritarian movement (particularly in collective action events, such as the Occupy Central protests) shaped individuals' economic preferences or personalities. While we do not have measures of individuals' characteristics prior to the existence of the movement, we can narrow our focus to first-year university students, whose age may have limited their opportunities to engage in political action in the past: indeed, 38% of first-year students participated in the Occupy Central protests, compared to 44% of older students; 7% of first years participated in the July 1, 2014, March, compared to 14% of older students; and, 30% of first year students voted in the 2015 District Council elections, compared to 44% of older students. We find that the characteristics of "less experienced" anti-authoritarians are very similar to those of the whole sample, suggesting that more experience in the anti-authoritarian movement is not playing a crucial role in driving the associations we observe (see Online Appendix Table A.5).

We are also able to evaluate the robustness of our findings by exploiting the fact that we conducted an earlier survey wave of HKUST students in fall 2015.<sup>22</sup> The early survey wave included some students who also participated in the 2016 (main) wave of our survey, meaning that analyzing the two waves provides a "panel" perspective on the relationships we observe (allowing us to examine the within-subject stability of our findings), as well as a repeated cross-section with differing respondents, allowing for a check of robustness of the relationships we find using an alternative subject pool, at a different time.

The fall 2015 survey wave was not as comprehensive as the spring 2016 "main wave", affecting both the construction of our anti-authoritarianism index and our measurement of fundamental factors. First, the fall 2015 survey wave did not include the elicitation of attitudes regarding the recent book sellers' controversy, voting plans in the 2016 LegCo election, participation plans in the 2016 July 1st protest, or donations to Demosisto — all of which were included in the anti-authoritarianism index constructed from the 2016 survey responses. In addition, among the fundamental factors we examine, the 2015 survey wave did not ask about household real estate

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<sup>22</sup>Recruitment for the 2015 survey wave occurred in October and November 2015 via mass email, producing a sample of 1,400 respondents.

assets, affecting the household economic and social status index, and students were not asked for a subjective income projection at age 40, affecting the projected economic status index. Note that fixed demographic characteristics were asked of survey participants only once (in the first wave in which they participated), so for students appearing in both the fall 2015 and spring 2016 waves, these variables are identical by design.

Our first robustness check using the 2015 survey wave is roughly a replication exercise: simply examining the bivariate relationships between fundamental factors and anti-authoritarianism using measures as close as possible to those constructed from the 2016 survey. We find that for most of the fundamental factors we measure in both survey waves, the results from the 2015 wave are qualitatively similar to those from the main, 2016, wave. We find that individuals' risk tolerance, reciprocity, preferences for redistribution, projected economic status, and demographic characteristics are all significantly associated with anti-authoritarianism in both the 2015 and 2016 survey waves (see Online Appendix Table A.6, columns 1 and 2).

We next conduct a check of within-individual consistency: we evaluate whether the same individuals' survey responses generate the same patterns across 2015 and 2016 survey waves, despite being measured over 6 months apart. Again we find that the fundamental factors measured have nearly the same qualitative relationship with anti-authoritarianism in the two survey waves. Risk tolerance, reciprocity, preferences for redistribution, projected economic status, and gender are all significant predictors of anti-authoritarianism in both waves (see Online Appendix Table A.6, columns 3 and 4).

Finally, we compare two groups of individuals without overlap over time, to conduct an even more demanding (approximate) "replication": we examine the 2016 (main wave) responses of individuals who did not appear in the 2015 survey wave as well as the responses of individuals who *only* appear in the 2015 survey wave. Comparing the associations between fundamental factors and anti-authoritarianism between these groups involves changing the exact set of survey questions; the subject pool; and the time when the survey was conducted. Yet, despite all of these differences, most of the patterns we find in our main wave are qualitatively identical in *both* of these sets of respondents (see Online Appendix Table A.6, columns 5 and 6).

### **4.3 Individual characteristics vs. a single latent characteristic**

A natural question to ask about the results presented thus far is whether the various fundamental factors we examine independently explain anti-authoritarianism, or rather capture a single latent characteristic. To determine whether the factors have independent explanatory power holding fixed the other factors, we regress our broad anti-authoritarianism index on all of the fundamental factors (summarized using z-score indices) simultaneously. In Table 4, we present the estimates from this regression. One can see that many of the patterns identified in univariate analyses are preserved in the multivariate regression: fundamental economic preferences — risk preferences, social preferences, and preferences for redistribution — continue to be significantly

associated with anti-authoritarianism; economic status continues to be negatively associated with anti-authoritarianism; and key background characteristics (gender and age in particular) are still significantly associated with anti-authoritarianism. Interestingly, the “Big 5” personality traits are no longer significantly associated with anti-authoritarianism once other fundamental factors are taken into account.<sup>23</sup>

#### 4.4 Explanatory power of the fundamental factors

Having found that multiple fundamental factors predict anti-authoritarianism holding fixed the others, the next question is: how much of the variation in anti-authoritarian ideology is explained by the fundamental factors we measure? In the first row of Table 5, we present the R-squared from a regression of our anti-authoritarianism index variable outcome on *all* of our fundamental factors from Panels C-G of Table A.2. One can see that the factors we measure explain nearly 10% of the variation in our index.

We next examine the explanatory power of categories of fundamental factors one at a time. We present two measures of the explanatory power of a factor: first, simply the R-squared from a regression of our anti-authoritarianism index variable outcome on that single factor (this is the “univariate R-squared”). Second, because the univariate R-squared will capture not just the effect of the independent variation in that factor, but also of any correlation between factors that both have explanatory power, we present a “marginal R-squared”, which is the *incremental* R-squared adding a single factor to a regression model that already included all of the other factors.

Examining the various categories of factors in Table 5 — whether considering the univariate or the marginal R-squared measure — one can see that economic preferences play the largest role in explaining the variation we observe in anti-authoritarianism. Indeed, more than half of the total explanatory power in our data comes from our measures of individuals’ economic preferences.

Individuals’ Big Five personality traits, their cognitive ability, and their household economic status all have very similar levels of explanatory power: each explains around one half of one percent of the variation in anti-authoritarianism once all the other factors are taken into account. Individuals’ background and demographic characteristics explain slightly more variation in anti-authoritarianism — around 1% — with gender being the most important characteristic.

## 5 Other correlates of anti-authoritarian ideology

A range of additional interesting individual characteristics are arguably simultaneously determined: they are both shaped by political ideology and also shape it. Because these variables are plausibly both cause and consequence of anti-authoritarian ideology, we do not treat them as fun-

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<sup>23</sup>Note that it is possible that personality traits are ultimate drivers of economic preferences. If so, personality traits may play an ultimate causal role in anti-authoritarianism even in the absence of a significant relationship between personality traits and anti-authoritarianism once economic preferences are accounted for.

damental drivers of anti-authoritarianism, but rather as interesting, further correlates. We leave the identification of causal relationships between anti-authoritarianism and these simultaneously determined outcomes to future work.

In Figure 2, we present binned scatter plots showing the associations between these simultaneously determined factors and anti-authoritarianism. The variables considered are those presented in Panels H-M of Table A.2. One can first see an interesting “null result” in the first row of Figure 2: anti-authoritarians’ beliefs about the evolution of Hong Kong’s political institutions are no more optimistic than the beliefs of other students. If anything, they are significantly more pessimistic about institutional outcomes in the near future (2025). Nor do the anti-authoritarians believe that there is a greater increase in the probability of achieving democratic institutions arising from protests. One might have believed that individuals would select into an anti-authoritarian movement as a function of their optimism about its prospects, but this does not seem to be the case in our setting.

In the second row of Figure 2, one can see the association between (residualized) beliefs about other students’ ideology, and one’s own anti-authoritarianism. Recall that we elicit beliefs about other respondents in an incentivized manner, paying subjects for more accurately guessing the true sample responses. Note, too, that we examine beliefs about others’ survey responses *residualized* against one’s own responses to remove any projection bias or anchoring effect that would tend to make own beliefs and beliefs about others positively correlated for artificial reasons. Here one can see even stronger evidence that anti-authoritarians are not optimists: in fact, the more a respondent adheres to anti-authoritarian values, the more pessimistic are his or her views about the broader student population’s adherence to anti-authoritarian ideology.

Because politics — particularly organized politics and engaging in protest — contains a strong social component, we next examine the social lives of students in our sample. One can see in the third row of Figure 2 that anti-authoritarians’ have much more politically-oriented social networks than do other students, though anti-authoritarians do not have significantly larger social networks.

Our finding that anti-authoritarians are not more optimistic about the democratic movement and are differentially pessimistic about the ideology of their classmates is quite surprising. It suggests that anti-authoritarians hold their ideology *despite* their lack of optimism. But perhaps anti-authoritarians are relatively more optimistic about their own social network? We elicit beliefs about friends’ political attitudes in an unincentivized manner.<sup>24</sup> In the fourth row of Figure 2, one can see that in fact there is very little relationship between (residualized) beliefs about one’s close friends’ anti-authoritarian ideology and one’s own ideology. Again, there is very little evidence that anti-authoritarians select into their ideology based on optimistic beliefs.

We next examine the association between media consumption and anti-authoritarianism. One can imagine differences in media consumption *causing* differences in political attitudes (as in

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<sup>24</sup>Since we do not know the actual ideology of each individual’s friends, we cannot offer payments for correct beliefs.

DellaVigna and Kaplan, 2007; DellaVigna et al., 2014) or resulting from individuals' ideology (as in Gentzkow and Shapiro, 2010; Gentzkow et al., 2014). While we cannot disentangle cause and effect in this setting, one sees striking differences in media consumption between anti-authoritarians and other students in the fifth row of Figure 2. Anti-authoritarians both consume more news and are more likely to consume news reported by Hong Kong, pro-democracy sources. Finally, in the right-hand side of the fifth row of Figure 2, one can see that anti-authoritarians are both more interested in politics, and are more knowledgeable about politics — these findings match the anti-authoritarians' greater consumption of news. An interesting implication of finding different consumption of media is that the anti-authoritarians may further diverge from other students in their political ideology over time.

In Online Appendix Table A.7, we present regression estimates of the relationships between these simultaneously determined factors and anti-authoritarianism, using both aggregate and disaggregated measures of the explanatory variables and the outcome (analogous to Table 3). Throughout the table, one can see that the associations we found in the aggregate scatter plots are robust to our measures of anti-authoritarianism and the many simultaneously determined variables we examine.

## 6 Conclusion

A general model of support for a political movement must incorporate three elements. First, *payoff* differences across individuals and states of the world: some individuals may stand to gain more than others from a successful political movement, for example, in traditional models of class conflict (ranging from Marx, 1977, to Moore, 1966, Rueschemeyer et al., 1992, or Acemoglu and Robinson, 2006). Second, differences in *beliefs* about the likelihood of various states of the world, even holding fixed individuals' payoffs from a successful movement. For example, individuals may differ in their beliefs about the strength of the state against which they consider protesting (Edmond, 2013); individuals may differ in their beliefs about other citizens, either in a game of strategic complements (Kuran, 1989, 1991, 1997) or substitutes (Olson, 1965). Finally, individuals may differ in their *preferences*, which could produce different participation decisions even for two people with the same payoffs from a successful movement and the same beliefs. For example, individuals may differ in their preferences over outcomes across states of the world, or in their preferences over actions (e.g., arising from expressive utility or identity, as in Akerlof and Kranton, 2000; Bursztyn et al., 2016).

While political economists have traditionally focused on variation across individuals in payoffs and beliefs as driving the differences observed in political ideology and behavior, our results suggest that variation in deep preferences also play an important role. Indeed, we find that fundamental economic preferences have the greatest power in explaining variation in anti-authoritarian ideology, suggesting that studying these preferences and understanding the sources of variation

in them is an important next step for understanding political ideology and behavior. Relative to prior work emphasizing a strong association between personality traits and political attitudes and behaviors, we emphasize a strong (perhaps complementary) role of economic preferences.

We will close with two caveats that also point to future directions for research: first, our work offers rich *descriptive* evidence on the association between a comprehensive set of individual characteristics and political ideology; however, a crucial next step is to try to isolate causal effects more precisely, particularly the effects of the simultaneously determined variables discussed above. Second, Hong Kong is a single case; similar work in other settings will be able to determine the external validity of our findings. It is worth emphasizing that even though Hong Kong's mixture of freedom of expression and absence of genuine political representation is unusual, it is not a unique case in a world increasingly characterized by "soft autocracies", rather than fully-fledged totalitarian dictatorships. Hong Kong's case is also an especially important one: political outcomes in Hong Kong will reverberate to Taiwan, and to mainland China, and thus will have global repercussions.



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## Figures and tables

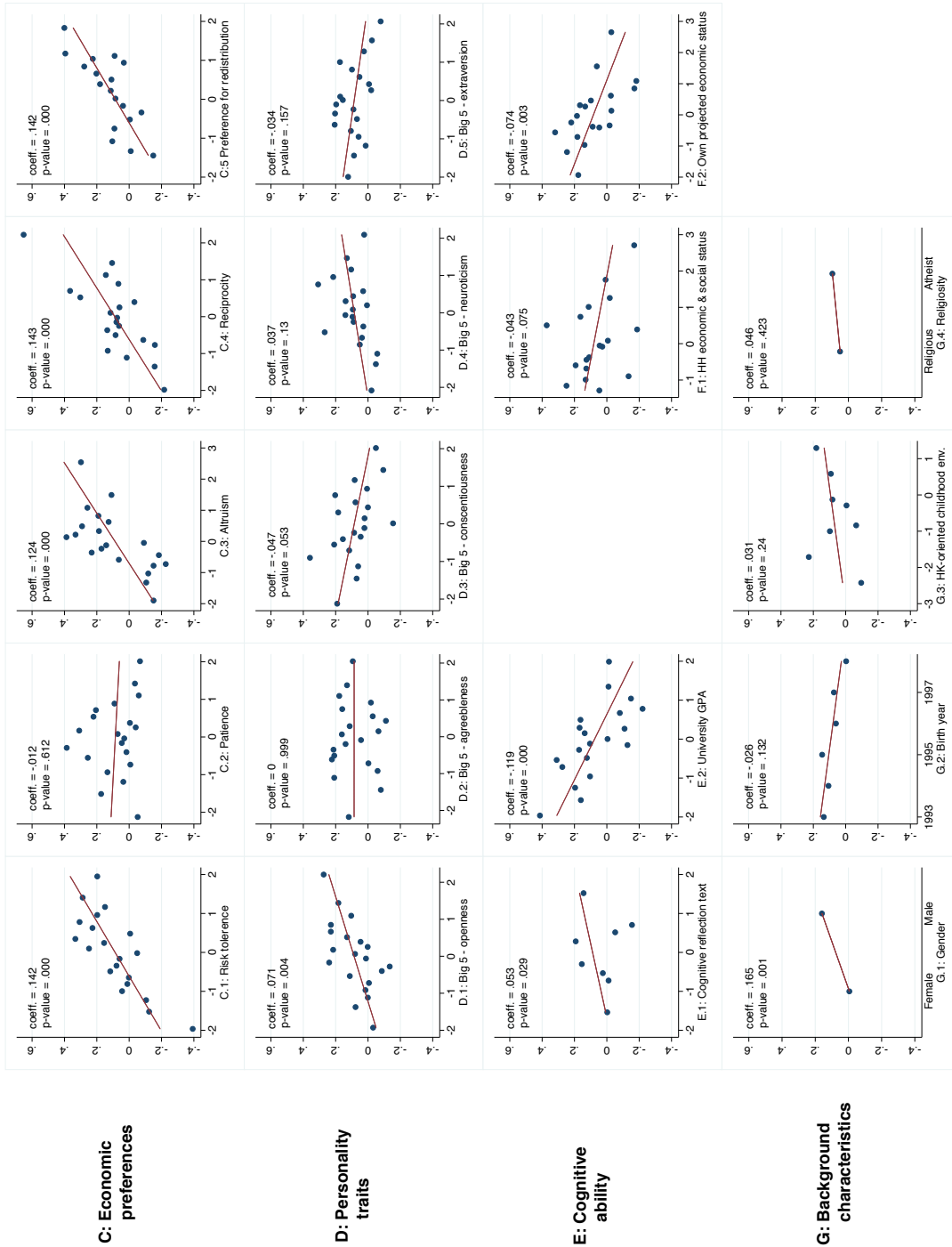


Figure 1: Binned scatter plots predicting z-score index (weighting by the inverse covariance of the standardized variables) of anti-authoritarianism using z-score indices of fundamental factors. The vertical axis always reports the index of anti-authoritarianism. All z-score indices have mean zero and standard deviation of one among the overall population of survey respondents. For gender, birth year, and religiosity, original variables instead of z-score indices are used.



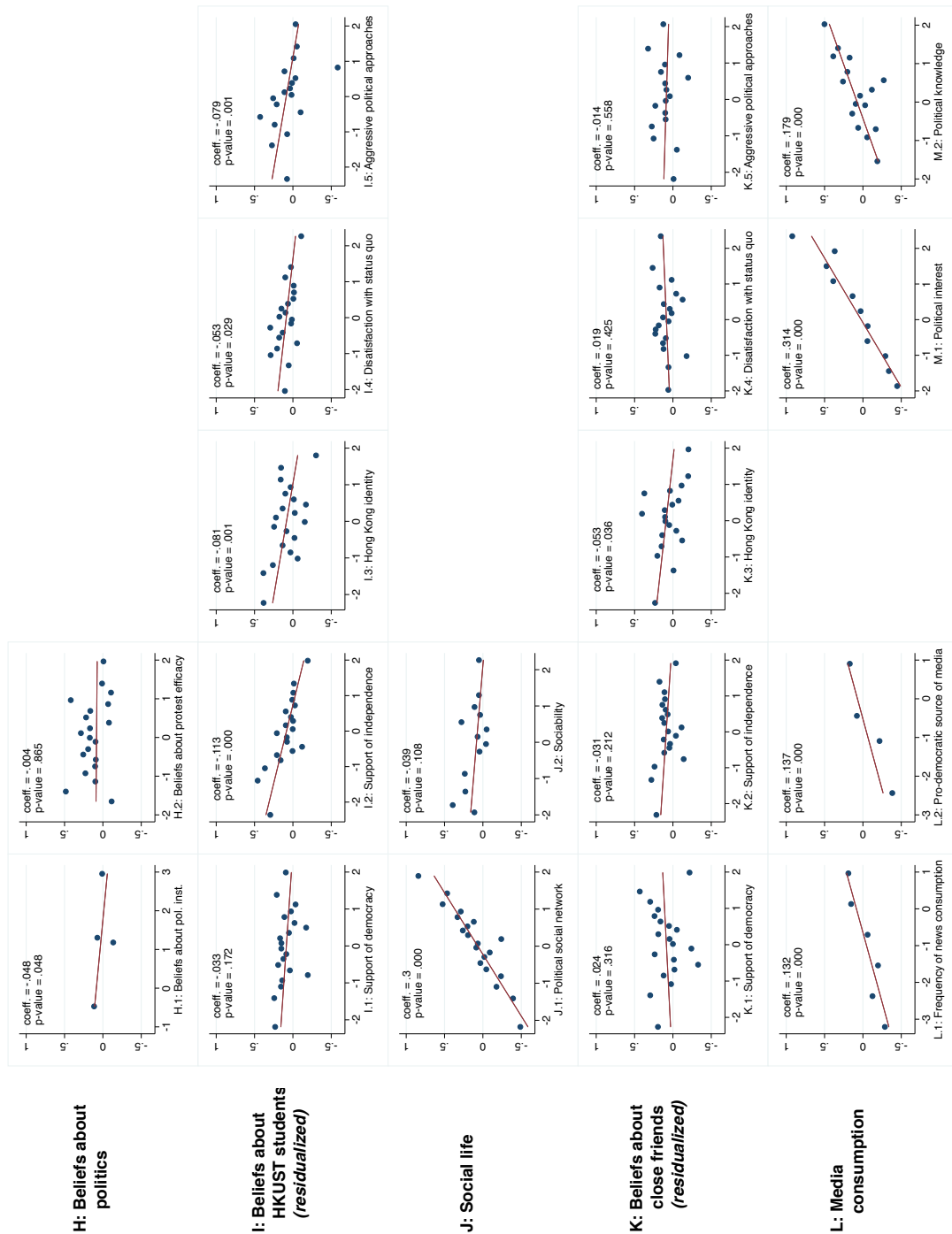


Figure 2: Binned scatter plots predicting z-score index (weighting by the inverse covariance of the standardized variables) of anti-authoritarianism using z-score indices of simultaneously determined factors. The vertical axis always reports the index of anti-authoritarianism. All z-score indices have mean zero and standard deviation of one among the overall population of survey respondents.

Table 1: Item count experiments: willingness to respond to direct questions

Attitudes:	“Yes” in direct question	$\Delta$ when veil is provided
Support for HK independence	0.465	0.054 [0.057]
Consider self as Hong Kongese	0.879	-0.063 [0.051]
Favorable view of CCP	0.077	-0.020 [0.059]
Support violence in pursuit of HK’s political rights	0.217	0.169*** [0.050]

The left hand column presents the fraction of 790 Hong Kong local students who expressed the corresponding attitude in response to a direct question. The right hand column presents the difference between that fraction and the fraction estimated to support the attitude using an item count technique (“list experiment”). 790 students asked the direct questions represent also the control group for the list experiment; the remaining 786 Hong Kong local students represent the treatment group. Assignment to conditions was random.

Table 2: Measurements of anti-authoritarianism

Measures:	(A.1)	(A.2)	(A.3)	(A.4)	(A.5)	(B.1)	(B.2)	(B.3)	(B.4)	(B.5)
Support for democracy (z-score)										
Support for HK independence (z-score)										
HK identity: self-reported (z-score)										
Unhappiness with political status quo (z-score)										
Anti-CCP views on current events (z-score)										
Participated in 2014 Umbrella Revolution										
Plan to vote democratic parties in 2016 Legco election										
Plan to participate in 2016 July 1st protest										
HK identity: revealed preference (z-score)										
Donated to Demosisto										
Panel A: <i>Summary statistics</i>										
Mean	0.064	0.088	0.152	0.071	0.066	0.420	0.807	0.168	0.011	0.127
Std. dev.	0.963	0.950	0.848	0.978	0.983	0.494	0.395	0.374	1.014	0.333
Panel B: <i>Pairwise correlations</i>										
(A.1)	–	0.599	0.559	0.390	0.644	0.374	0.109	0.152	0.183	0.078
(A.2)		–	0.571	0.378	0.549	0.283	0.105	0.119	0.180	0.029 <sup>1</sup>
(A.3)			–	0.407	0.502	0.272	0.123	0.094	0.223	0.004 <sup>1</sup>
(A.4)				–	0.395	0.218	0.076	0.105	0.121	0.005
(A.5)					–	0.306	0.114	0.112	0.166	0.022 <sup>1</sup>
(B.1)						–	0.140	0.212	0.103	0.087
(B.2)							–	0.018 <sup>1</sup>	0.074	-0.011 <sup>1</sup>
(B.3)								–	0.062	0.103
(B.4)									–	0.005 <sup>1</sup>

All summary statistics and correlations are calculated using 1576 completed surveys from Hong Kong locals. All z-score indices are constructed weighting by the inverse covariance of the standardized variables. Among estimated pairwise correlations, <sup>1</sup> indicates that the pairwise correlation is *not* significant at 1% level.

Table 3: Anti-authoritarianism & fundamental factors

		Anti-authoritarianism						
		overall		stated pref.		behavior		
		beta	s.e.	FDR adj. p-value	beta	beta	mean ex.var.	std.dev. ex.var.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Panel C: Economic preferences</b>								
Category C.1: <i>Risk tolerance</i>								
C.1.1	Willingness to take risk	0.040***	[0.012]	0.001	0.040***	0.039***	5.149	2.138
C.1.2	Certainty equivalent	0.020***	[0.004]	0.001	0.014***	0.019***	11.33	6.602
C.1.3	Lottery decisions	0.053***	[0.016]	0.001	0.082***	0.040***	3.250	1.527
	<b>z-score index</b>	0.142***	[0.025]	–	0.146***	0.127***	-0.010	0.992
Category C.2: <i>Patience</i>								
C.2.1	Willingness to give up today	0.032**	[0.014]	0.080	0.063***	0.023*	6.353	1.813
C.2.2	Not postpone tasks	-0.018*	[0.011]	0.095	-0.018	-0.017	4.478	2.230
C.2.3	Patience index	-0.004	[0.003]	0.095	0.000	-0.005*	23.09	9.331
	<b>z-score index</b>	-0.012	[0.025]	–	0.038	-0.025	-0.022	0.991
Category C.3: <i>Altruism</i>								
C.3.1	Willingness to give	0.070***	[0.013]	0.001	0.054***	0.069***	5.600	1.899
C.3.2	Amount to donate	0.025*	[0.012]	0.034	-0.033	0.031***	1.841	2.207
	<b>z-score index</b>	0.124***	[0.026]	–	0.064**	0.132***	-0.015	0.986
Category C.4: <i>Reciprocity</i>								
C.4.1	Willingness to return favor	0.038***	[0.015]	0.004	0.095***	0.021	7.388	1.658
C.4.2	People have best intentions	0.002	[0.011]	0.174	-0.017	0.011	4.990	2.069
C.4.3	Give gift to helpers	0.045***	[0.013]	0.001	0.036***	0.048***	3.907	1.809
C.4.4	Willingness to punish for self	0.057***	[0.011]	0.001	0.063***	0.046***	5.198	2.251
C.4.5	Willingness to punish for others	0.067***	[0.012]	0.001	0.062***	0.061***	4.818	2.091
C.4.6	Willingness to revenge	0.053***	[0.012]	0.001	0.051***	0.047***	4.794	2.199
	<b>z-score index</b>	0.143***	[0.026]	–	0.152***	0.133***	-0.021	1.002
Category C.5: <i>Preference for redistribution</i>								

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		Anti-authoritarianism						
		overall		stated pref.		behavior		
		beta	s.e.	FDR adj. p-value	beta	beta	mean ex.var.	std.dev. ex.var.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
C.5.1-11	Average amount allocated	0.726***	[0.126]	-	0.025	0.862***	0.287	0.196
<b>Panel D: Personality traits</b>								
Category D.1: <i>Big 5 - openness</i>								
D.1.1	No-nonsense vs. dreamer	0.052**	[0.022]	0.044	0.048**	0.043*	2.986	1.102
D.1.2	Practical vs. theoretical	0.015	[0.027]	0.516	-0.006	0.012	2.854	0.921
D.1.3	Authority vs. imagination	0.117***	[0.026]	0.001	0.114***	0.102***	2.963	0.909
D.1.4	Routine vs. novelty	0.030	[0.024]	0.181	0.276	0.038	3.300	1.002
D.1.5	Clear-cut vs. ambiguity	0.024	[0.025]	0.344	-0.038	0.034	2.548	0.948
	<b>z-score index</b>	0.071***	[0.026]	-	0.034	0.070***	-0.006	0.989
Category D.2: <i>Big 5 - agreeableness</i>								
D.2.1	Abrupt vs. courteous	-0.079***	[0.027]	0.016	-0.056**	-0.066**	3.783	0.891
D.2.2	Selfish vs. generous	0.071***	[0.026]	0.016	0.012	0.089***	3.168	0.890
D.2.3	Cold vs. warm	0.001	[0.026]	0.619	-0.034	0.039	3.123	0.910
D.2.4	Independent vs. team-player	0.031	[0.024]	0.262	-0.028	0.058**	3.097	0.993
D.2.5	Skeptical vs. trusting	-0.012	[0.024]	0.527	-0.073***	0.028	3.411	0.988
	<b>z-score index</b>	-0.000	[0.024]	-	-0.054***	0.039	-0.030	0.993
Category D.3: <i>Big 5 - conscientiousness</i>								
D.3.1	Messy vs. neat	-0.061***	[0.024]	0.049	-0.032**	-0.061**	3.342	1.008
D.3.2	Open-minded vs. decisive	-0.003	[0.025]	0.667	-0.049**	0.018	2.764	0.996
D.3.3	Distracted vs. focused	-0.023	[0.023]	0.316	-0.030	-0.015	3.001	1.012
D.3.4	Chaos vs. order	-0.044*	[0.027]	0.238	-0.002	-0.055**	3.582	0.937
D.3.5	Procrastinate vs. on time	-0.023	[0.021]	0.316	-0.030	-0.019	3.421	1.099
	<b>z-score index</b>	-0.047*	[0.025]	-	-0.048*	-0.038	-0.020	0.992
Category D.4: <i>Big 5 - neuroticism</i>								
D.4.1	Calm vs. eager	0.027	[0.023]	1.000	0.607	0.023	2.794	1.057
D.4.2	Confident vs. cautious	-0.005	[0.025]	0.710	0.021	-0.031	3.262	0.975

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Anti-authoritarianism									
	overall			stated pref.		behavior		mean ex.var.	std.dev. ex.var.
	beta	s.e.	FDR adj. p-value	beta	beta	beta	beta		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		
D.4.3	0.041	[0.027]	0.607	0.120***	-0.020	2.847	0.920		
D.4.4	0.022	[0.025]	0.607	0.761***	-0.003	3.415	1.012		
D.4.5	0.033	[0.023]	0.607	0.034	0.026	3.086	1.017		
<b>z-score index</b>	0.037	[0.024]	-	0.082***	-0.001	0.027	0.983		
Category D.5: Big 5 - extraversion									
D.5.1	0.011	[0.022]	1.000	-0.032	0.036*	2.880	1.107		
D.5.2	-0.085***	[0.023]	0.002	-0.142***	-0.026	3.166	1.026		
D.5.3	-0.001	[0.025]	1.000	-0.055**	0.036	2.611	0.990		
D.5.4	-0.030	[0.024]	0.767	-0.081***	0.021	3.257	0.969		
D.5.5	0.015	[0.024]	1.000	-0.035	0.049**	2.993	1.015		
<b>z-score index</b>	-0.034	[0.024]	-	-0.107***	0.026	-0.011	1.005		
<b>Panel E: Cognitive ability</b>									
Category E.1: Cognitive reflection test									
E.1.1	-0.005	[0.054]	0.443	0.099*	-0.048	0.265	0.442		
E.1.2	0.121**	[0.050]	0.016	0.218***	0.061	0.678	0.467		
E.1.3	0.138***	[0.048]	0.013	0.158***	0.106**	0.594	0.491		
<b>z-score index</b>	0.053**	[0.024]	-	0.103***	0.023	-0.045	0.999		
Category E.2: University GPA									
E.2.1	-0.239***	[0.051]	-	-0.171***	-0.247***	-0.041	0.475		
<b>Panel F: Economic status</b>									
Category F.1: Household economic & social status									
F.1.1	0.001	[0.001]	0.415	0.002	0.002	27.25	16.80		
F.1.2	-0.030	[0.026]	0.337	-0.040*	-0.016	0.852	0.962		
F.1.3	-0.074	[0.053]	0.329	-0.154***	-0.019	0.285	0.452		
F.1.4	-0.167***	[0.055]	0.010	-0.200***	-0.121**	0.236	0.425		
<b>z-score index</b>	-0.043*	[0.024]	-	-0.059**	-0.018	-0.015	1.001		

Continued on next page

		Anti-authoritarianism						
		overall		stated pref.		behavior		
		FDR adj.		beta		beta		
		p-value		beta		beta		
		s.e.		beta		beta		
		(2)		(4)		(5)		
		beta		beta		beta		
		(1)		(3)		(6)		
		std.dev.		std.dev.		std.dev.		
		ex.var.		ex.var.		ex.var.		
		(7)		(7)		(7)		
Category F.1: <i>Own projected economic status</i>								
F.2.1	Projected median income	-0.007	[0.011]	0.328	-0.013	-0.005	15.37	2.395
F.2.2	Expected income at 40	-0.102***	[0.025]	0.001	-0.142***	-0.055**	4.395	0.944
	<b>z-score index</b>	-0.074***	[0.026]	-	-0.108***	-0.041	-0.039	0.982
<b>Panel G: Background characteristics</b>								
G.1	Gender	0.165***	[0.048]	-	0.159***	0.120**	0.553	0.497
G.2	Birth year	-0.026	[0.017]	-	-0.039**	-0.015	1996	1.407
Category G.3: <i>HK-oriented childhood environment</i>								
G.3.1	Generation migrated to HK	0.047*	[0.025]	0.131	0.026	0.050**	2.714	0.955
G.3.2	Attended English high school	-0.013	[0.066]	0.723	0.007	0.062	0.814	0.389
	<b>z-score index</b>	0.031	[0.027]	-	0.022	0.037	0.061	0.949
Category G.4: <i>Religiosity</i>								
G.4.1	Religiosity	0.046	[0.058]	-	0.088	0.025	0.771	0.420

All regressions predict anti-authoritarianism z-score indices using fundamental factors. One index, labelled "overall", includes all variables; a second index, "stated pref.", includes only responses to direct questions; and, a third index, "revealed pref.", includes only self reported behavior and behavior in incentivized choices made in the context of the survey. The z-score indices (weighting by the inverse covariance of the standardized variables) and the FDR-adjusted p-values are computed following Anderson (2008). Coefficients are estimated using 1576 completed surveys from Hong Kong locals.

Table 4: Simultaneous regression of fundamental factors

	Anti-authoritarianism	
	beta	s.e.
	(1)	(2)
<b>C: Economic preferences</b>		
C.1: Risk tolerance	0.102***	[0.026]
C.2: Patience	-0.019	[0.026]
C.3: Altruism	0.058**	[0.027]
C.4: Reciprocity	0.108***	[0.025]
C.5: Preference for redistribution	0.115***	[0.025]
<b>D: Personality traits</b>		
D.1: Big 5 - openness	0.027	[0.026]
D.2: Big 5 - agreeableness	-0.016	[0.031]
D.3: Big 5 - conscientiousness	-0.021	[0.028]
D.4: Big 5 - neuroticism	0.047*	[0.026]
D.5: Big 5 - extraversion	-0.042	[0.030]
<b>E: Cognitive ability</b>		
E.1: Cognitive reflection test	0.013	[0.025]
E.2: University GPA	-0.076***	[0.027]
<b>F: Economic status</b>		
F.1: HH economic & social status	-0.035	[0.025]
F.2: Own projected economic status	-0.055**	[0.027]
<b>G: Background characteristics</b>		
G.1: Gender	0.124**	[0.052]
G.2: Birth year	-0.035**	[0.017]
G.3: HK-oriented childhood env.	0.051*	[0.026]
G.4: Religiosity	0.021	[0.057]
Observations	1576	–
Mean DV	0.086	–
Std.Dev. DV	0.960	–

Coefficients estimated by a regression model predicting the “overall” anti-authoritarianism index using all fundamental factors (summarized using z-score indices) simultaneously. The z-score indices are calculated weighting by the inverse covariance of the standardized variables.

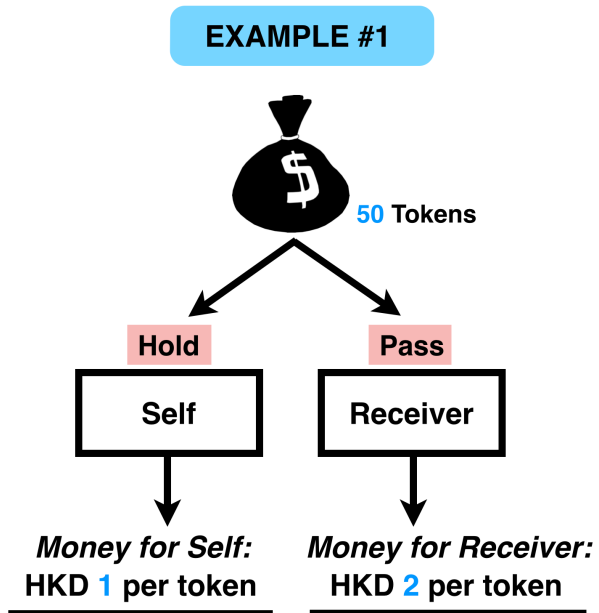


Table 5: Variance decomposition of the anti-authoritarianism index

Categories	Univariate $R^2$	Marginal $R^2$
<b>ALL FUNDAMENTAL FACTORS</b>	0.090	0.090
<b>C: Economic preferences</b>	0.057	0.053
C.1: Risk tolerance	0.022	0.009
C.2: Patience	0.000	0.001
C.3: Altruism	0.016	0.003
C.4: Reciprocity	0.022	0.011
C.5: Preference for redistribution	0.022	0.014
<b>D: Personality traits</b>	0.010	0.006
D.1: Big 5 - openness	0.005	0.001
D.2: Big 5 - agreeableness	0.000	0.000
D.3: Big 5 - conscientiousness	0.002	0.001
D.4: Big 5 - neuroticism	0.001	0.002
D.5: Big 5 - extraversion	0.001	0.001
<b>E: Cognitive ability</b>	0.019	0.005
E.1: Cognitive reflection test	0.003	0.000
E.2: University GPA	0.014	0.005
<b>F: Economic status</b>	0.007	0.006
F.1: HH economic & social status	0.002	0.003
F.2: Own projected economic status	0.006	0.003
<b>G: Background characteristics</b>	0.012	0.008
G.1: Gender	0.007	0.004
G.2: Birth year	0.001	0.003
G.3: HK-oriented childhood env.	0.001	0.003
G.4: Religiosity	0.000	0.000

Variance decomposition exercise uses 1576 completed surveys from Hong Kong locals. Univariate  $R^2$  is the R-squared from a regression predicting the anti-authoritarianism z-score index using the factor (summarized by its own z-score index) indicated in each row. Marginal  $R^2$  is the incremental R-squared adding the single factor indicated in a given row to a regression model that already included all of the other factors listed (summarized by their z-score indices). Each of the five categories' (C, D, E, F, G)  $R^2$  aggregates the corresponding sub-category  $R^2$  values.

**Appendix figures**



Panel A

**Divide 20 tokens:**

**Hold** \_\_\_ @ HKD 1 per token; and **Pass** \_\_\_ @ HKD 3 per token.

How many tokens do you want to **hold** for yourself?

**Divide 30 tokens:**

**Hold** \_\_\_ @ HKD 2 per token; and **Pass** \_\_\_ @ HKD 1 per token.

How many tokens do you want to **hold** for yourself?



Panel B

Figure A.1: Instructions and actual interface for allocation decisions in the modified dictator game.



**At the beginning** of the component, you will receive **HKD 20**.

You are asked to decide whether you wish to **transfer** any amount of the HKD 20 to the Receiver assigned to you; and if so, how much. You will be able to **keep** the amount that you decide **not** to transfer to the Receiver.

You may also **receive money back from the Receiver**, as follows: We will **triple (3x)** the amount you transfer and give it to the Receiver; that is, for every HKD 1 that you transfer, the Receiver will receive HKD 3. In a few days time, we will ask the Receiver to decide if he/she wants to return any of the money that he/she received (i.e. 3x what you transferred) to you; and if so, how much. The amount he/she sent back to you will **not** be tripled.

Panel A

You are given **HKD 20**, and you can **transfer** any amount to the Receiver assigned to you.

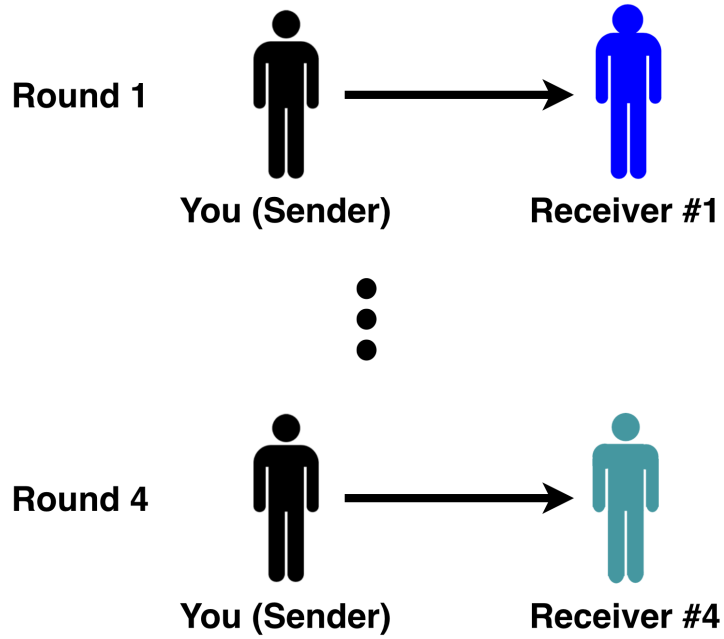
We will **triple (3x)** the amount you transfer and give it to the Receiver.

In a few days time, we will ask the Receiver to decide if  $\{e://Field/Heshe_1\}$  wants to **return** any of the money that  $\{e://Field/Heshe_1\}$  received (i.e. 3x what you transfer) back to you.

Now, please tell us, how much of the **HKD 20** do you wish to **transfer to the Receiver?**

Panel B

Figure A.2: Instructions and actual interface for allocation decisions in the trust game.



Panel A

We will now assign you the **1st** Receiver.

The **1st Receiver** assigned to you has the following profile:

Age: **19**  
Gender: **Male**  
Hometown: **Hong Kong (香港)**

Panel B

Figure A.3: Instructions and actual interface for randomly matched recipients in the lab games.

## Appendix tables

Table A.1: Sample representativeness

	Population ratio	Sample ratio	T-test p-value
	(1)	(2)	(3)
Male	0.615	0.550	0.000
Entering cohort of 2012	0.240	0.217	0.018
Entering cohort of 2013	0.254	0.213	0.000
Entering cohort of 2014	0.245	0.253	0.458
Entering cohort of 2015	0.261	0.318	0.000
School of Engineering	0.377	0.316	0.000
School of Sciences	0.237	0.233	0.708
School of Business and Management	0.355	0.376	0.068
School of Humanities and Social Sciences	0.024	0.026	0.627
Interdisciplinary Programs	0.007	0.042	0.000

Source for population ratio: HKUST undergraduate student profile compiled by HKUST Student Affairs Office. Sample ratio corresponds to students who completed the main wave of our survey in 2016. Column (3) presents p-values from t-tests of whether the population proportion equals the sample proportion.

Table A.2: HKUST student survey questions

OUTCOMES	
<b>Panel A: Responses to direct questions</b>	
<i>Category A.1: Support for democracy</i>	
A.1.1	How important is it for you to live in a country that is governed democratically, even if democracy makes no significant difference in the socioeconomic status of you, your family, or the country as a whole? (0 = not at all important; 10 = absolutely important)
A.1.2	Do you think that universal and truly democratic elections play an important role in determining whether you and your family are able to make a better living? (0 = not at all important; 10 = extremely important)
A.1.3	Do you think that universal and truly democratic elections are an important factor in whether or not a country's economy can develop successfully? (0 = not at all important; 10 = extremely important)
A.1.4	Where do you stand in terms of your political attitudes? (0 = pro-establishment / pro-Beijing; 10 = pro-Democracy)
A.1.5	Where do you stand in terms of the following two statements? (0 = I think that only those who demonstrate patriotism towards Beijing should be allowed to become candidates for the Chief Executive; 10 = I think that no restriction should be imposed in terms of who are allowed to become candidates during the Chief Executive election)
<i>Category A.2: Support for HK independence</i>	
A.2.1	Where do you stand in terms of the following two statements? (0 = I would like to see Hong Kong be fully integrated with the political institutions of Mainland China; 10 = I would like Hong Kong to be separate and have its own political institutions)
A.2.2	Where do you stand in terms of the following two statements? (0 = I would like to see Hong Kong be fully integrated with the economic institutions of Mainland China; 10 = I would like Hong Kong to be separate and have its own economic institutions)
A.2.3	As it is now, is the Chinese Communist Party legitimate in ruling over Hong Kong? (0 = completely legitimate; 10 = not at all legitimate)
A.2.4	If the Chinese Communist Party undergoes significant reform and Mainland China adopts truly democratic political institutions, do you think the Chinese central government can be a legitimate ruling government over Hong Kong? (0 = completely legitimate; 10 = not at all legitimate)
A.2.5	To what extent do you think Hong Kong should be an independent nation? (0 = HK should not be independent at all; 10 = HK should definitely be independent)
A.2.6	To what extent do you think Hong Kong society should discuss and debate the potential prospect of its independence? (0 = independence should not be discussed at all; 10 = important and beneficial to have open discussion on independence)
<i>Category A.3: HK identity: self-reported</i>	
A.3.1	Where do you stand in terms of your national identity? (0 = Chinese; 10 = Hong Kongese)
A.3.2	Where do you stand in terms of your cultural identity? (0 = Chinese; 10 = Hong Kongese)
A.3.3	How important is being a Hong Kongese citizen to you? (0 = not at all important; 10 = extremely important)
A.3.4	How important is being a Chinese citizen to you? (0 = extremely important; 10 = not at all important)
<i>Category A.4: Unhappiness with political status quo</i>	

*Continued on next page*

- 
- A.4.1 How democratically is Hong Kong being governed today? (0 = completely democratic; 10 = not at all democratic)
  - A.4.2 How would you rate the political system in Hong Kong between 1997 and 2012, relative to that prior to 1997? (0 = extremely good; 10 = extremely bad)
  - A.4.3 How would you rate the political system in Hong Kong today, relative to that prior to 1997? (0 = extremely good; 10 = extremely bad)
  - A.4.4 All things considered, how satisfied are you with your life as a whole these days? (0 = completely satisfied; 10 = completely dissatisfied)
- 

Category A.5: *Anti-CCP views on current events*

---

- A.5.1 To what degree do believe that the electoral reform package proposed by Mainland China is democratic? (0 = completely democratic; 10 = completely undemocratic)
  - A.5.2 Do you support the Legislative Council's veto decision? (0 = completely against Legco's decision; 10 = completely support Legco's decision)
  - A.5.3 Between October and December 2015, multiple booksellers from Causeway Bay Books have gone missing. Many suspect that the mainland Chinese government was involved. If this is true, what do you think of mainland Chinese government's action? (0 = completely legitimate, in accordance with Basic Law; 10 = completely illegitimate, violation against Basic Law)
- 

**Panel B: Self-reported behavior and real-stakes decisions**

---

- B.1 Have you participated in the Occupy Central / Umbrella Revolution during September - December 2014?
  - B.2 Which party are you are you planning to vote for, during the 2016 Hong Kong Legislative Council Election? (0 = pro-Beijing parties; 1 = pro-democracy parties)
  - B.3 Are you planning to participate in the July 1st March in 2016? (0 = no, or not sure yet but more unlikely than yes; 1 = yes, or not sure yet but more likely than not)
  - B.4.1-4 Average amount allocated to HK local partner in national identity games, relative to the amount allocated to Mainland Chinese
  - B.5 How much money from your participation fee do you want to contribute to Demosisto? (0 = none; 1 = positive amount)
- 

FUNDAMENTAL FACTORS

---

**Panel C: Economic preferences**

---

Category C.1: *Risk tolerance*

---

- C.1.1 Please tell me, in general, how willing or unwilling you are to take risks? (0 = completely unwilling to take risks; 10 = very willing to take risks)
  - C.1.2 Certainty equivalent from step-wise lottery choices (what would you prefer: a draw with 50 percent chance of receiving 300 HKD, and the same 50 percent chance of receiving nothing, or the amount of xxx HKD as a sure payment?)
  - C.1.3 Eckel and Grossman (2002) lottery decisions: for the following lottery options, please choose one that you like the most? [*incentivized*]
- 

Category C.2: *Patience*

---

- C.2.1 How willing are you to give up something that is beneficial for you today in order to benefit more from that in the future? (0 = completely unwilling; 10 = very willing)
  - C.2.2 I tend to postpone tasks even if I know it would be better to do them right away (0 = describes me perfectly; 10 = does not describe me at all)
- 

*Continued on next page*



---

C.2.3 Patience index from a step-wise intertemporal choices (would you rather receive 100 HKD today or xxx HKD in 12 months?)

---

Category C.3: *Altruism*

---

C.3.1 How willing are you to give to good causes without expecting anything in return? (0 = completely unwilling; 10 = very willing)

C.3.2 Today you unexpectedly received 10,000 HKD. How much of this amount would you donate to a good cause? (value between 0 and 10,000)

---

Category C.4: *Reciprocity*

---

C.4.1 When someone does me a favor I am willing to return it (0 = describes me perfectly; 10 = does not describe me at all)

C.4.2 I assume that people have only the best intentions (0 = does not describe me at all; 10 = describes me perfectly)

C.4.3 When a stranger helps you, would you be willing to give one of the following presents to the stranger as a thank-you gift?

C.4.4 How willing are you to punish someone who treats you unfairly, even if there may be costs for you? (0 = completely unwilling; 10 = very willing)

C.4.5 How willing are you to punish someone who treats others unfairly, even if there may be costs for you? (0 = completely unwilling; 10 = very willing)

C.4.6 If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so (0 = describes me perfectly; 10 = does not describe me at all)

---

Category C.5: *Preference for redistribution*

---

C.5.1-11 Average amount of money allocated to a fellow HK local partner in a series of dictator games [incentivized]

---

**Panel D: Personality traits**

---

Category D.1: *Big 5 - openness*

---

D.1.1-5 On each numerical scale that follows, indicate which point is generally more descriptive of you:

D.1.1 1 = no-nonsense; 5 = a dreamer

D.1.2 1 = practical; 5 = theoretical

D.1.3 1 = following authority; 5 = following imagination

D.1.4 1 = seek routine; 5 = seek novelty

D.1.5 1 = prefer things clear-cut; 5 = comfortable with ambiguity

---

Category D.2: *Big 5 - agreeableness*

---

D.2.1-5 On each numerical scale that follows, indicate which point is generally more descriptive of you:

D.2.1 1 = abrupt; 5 = courteous

D.2.2 1 = selfish; 5 = generous

D.2.3 1 = cold; 5 = warm

D.2.4 1 = independent; 5 = team player

D.2.5 1 = skeptical; 5 = trusting

---

Category D.3: *Big 5 - conscientiousness*

---

D.3.1-5 On each numerical scale that follows, indicate which point is generally more descriptive of you:

D.3.1 1 = messy; 5 = neat

D.3.2 1 = open-minded; 5 = decisive

D.3.3 1 = easily distracted; 5 = stay focused

D.3.4 1 = comfortable with chaos; 5 = a preference for order

---

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---

D.3.5 1 = procrastinate; 5 = on time

---

Category D.4: *Big 5 - neuroticism*

---

D.4.1-5 On each numerical scale that follows, indicate which point is generally more descriptive of you:

D.4.1 1 = calm; 5 = eager

D.4.2 1 = confident; 5 = cautious

D.4.3 1 = upbeat; 5 = discouraged

D.4.4 1 = don't give a darn; 5 = easily embarrassed

D.4.5 1 = unflappable; 5 = distractible

---

Category D.5: *Big 5 - extraversion*

---

D.5.1-5 On each numerical scale that follows, indicate which point is generally more descriptive of you:

D.5.1 1 = prefer being alone; 5 = prefer being with others

D.5.2 1 = pessimistic; 5 = optimistic

D.5.3 1 = private; 5 = exhibitionist

D.5.4 1 = cool; 5 = outgoing

D.5.5 1 = thoughtful; 5 = conversational

---

**Panel E: Cognitive ability**

---

Category E.1: *Cognitive reflection test*

---

E.1.1 A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost?

E.1.2 If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?

E.1.3 In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

---

Category E.2: *University GPA*

---

E.2.1 GPA at HKUST, demeaned by major/program

---

**Panel F: Economic status**

---

Category F.1: *Household economic & social status*

---

F.1.1 During the past 12 months, what's the average monthly income of your family?

F.1.2 How many properties in HK do your parents currently own in total?

F.1.3 Father's highest educational attainment is above high school

F.1.4 Mother's highest educational attainment is above high school

---

Category F.2: *Student's projected economic status*

---

F.2.1 Median income of HKUST graduates in same major/program (as of 2014)

F.2.2 At age 40, where do you see yourself financially, relative to your classmates at HKUST? (1 = at the very bottom; 7 = at the very top)

---

**Panel G: Background characteristics**

---

G.1 Gender (0 = female; 1 = male)

G.2 Birth year

---

Category G.3: *HK-oriented childhood environment*

---

G.3.1 Generations since family migrated to HK (1 = self-migrated; 4 = great grandparents migrated)

G.3.2 Attended HK high school using English as language of instruction

---

Category G.4: *Religiosity*

---

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---

G.4.1 Religiosity (0 = atheist; 1 = religious)

---

SIMULTANEOUSLY DETERMINED VARIABLES

---

**Panel H: Beliefs about politics**

---

Category H.1: *Beliefs about future institutions*

---

- H.1.1 Optimistic about HK's political institutions in 2025 (believe that Hong Kong will have separate and completely different political institutions from those of Mainland China by 2025, with high certainty)
  - H.1.2 Optimistic about HK's political institutions in 2050 (believe that Hong Kong will have separate and completely different political institutions from those of Mainland China by 2050, with high certainty)
- 

Category H.2: *Beliefs about protest efficacy*

---

- H.2.1 Probability of achieving democratic institutions in HK if protests occur, relative to the probability if no protest occurs (based on separate elicitation of probability of various protest scenarios and conditional probabilities of democratic institutions under these scenarios)
- 

**Panel I: Beliefs about HKUST students**

---

Category I.1: *Beliefs about HKUST students: support for democracy*

---

- I.1.1-2 What is the average answer that other participants from HKUST in this study have chosen?
    - I.1.1 Corresponding question: A.1.4
    - I.1.2 Corresponding question: A.1.5
- 

Category I.2: *Beliefs about HKUST students: support for HK independence*

---

- I.2.1-3 What is the average answer that other participants from HKUST in this study have chosen?
    - I.2.1 Corresponding question: A.2.1
    - I.2.2 Corresponding question: A.2.2
    - I.2.3 Corresponding question: A.2.5
- 

Category I.3: *Beliefs about HKUST students: HK identity*

---

- I.3.1-2 What is the average answer that other participants from HKUST in this study have chosen?
    - I.3.1 Corresponding question: A.3.1
    - I.3.2 Corresponding question: A.3.2
- 

Category I.4: *Beliefs about HKUST students: unhappiness with political status quo*

---

- I.4.1-2 What is the average answer that other participants from HKUST in this study have chosen?
    - I.4.1 Corresponding question: A.4.1
    - I.4.2 Corresponding question: A.4.4
- 

Category I.5: *Beliefs about HKUST students: aggressive pursuit of political rights*

---

- I.5.1 What is the average answer that other participants from HKUST in this study have chosen? Corresponding question: A.6.2
- 

**Panel J: Social life**

---

Category J.1: *Political social network*

---

- J.1.1 When you get together with your friends, would you say you discuss political matters frequently, occasionally, or never? (0 = never; 10 = frequently)
- 

*Continued on next page*

- 
- J.1.2 When you, yourself, hold a strong opinion, do you ever find yourself persuading your friends, relatives or fellow schoolmates to share your views or not? If so, does this happen often, from time to time, or rarely? (0 = never; 10 = always)
- J.1.3 Do you know any direct relative who has participated in the Occupy Central movement in 2014?
- J.1.4 Do you know any schoolmate who has participated in the Occupy Central movement in 2014?
- J.1.5 Do you know any friend outside of school who has participated in the Occupy Central movement in 2014?
- J.1.6 Has any of your direct relatives, schoolmates, or friends outside of school persuaded you to support Occupy Central (or anti-Occupy Central)?
- J.1.7 How much do you know, on average, about your direct relatives' political orientation? (0 = do not know at all; 10 = very familiar and certain)
- J.1.8 How much do you know, on average, about your schoolmates' political orientation? (0 = do not know at all; 10 = very familiar and certain)
- J.1.9 How much do you know, on average, about your friends' political orientation? (0 = do not know at all; 10 = very familiar and certain)
- 

Category J.2: *Sociability*

---

- J.2.1 Total number of friends at HKUST elicited (Please list the names of your friends at HKUST, in the order from those whom you interact with most frequently, to those whom you interact with less frequently. Please list as many names as you want – there is no space limit)
- J.2.2 Current relationship status is non-single
- 

**Panel K: Beliefs about close friends**

---

Category K.1: *Beliefs about close friends: support for democracy*

---

- K.1.1-2 What is the average answer that 5 of your closest friends at HKUST would have chosen?
- K.1.1 Corresponding question: A.1.4
- K.1.2 Corresponding question: A.1.5
- 

Category K.2: *Beliefs about close friends: support for HK independence*

---

- K.2.1-3 What is the average answer that 5 of your closest friends at HKUST would have chosen?
- K.2.1 Corresponding question: A.2.1
- K.2.2 Corresponding question: A.2.2
- K.2.3 Corresponding question: A.2.5
- 

Category K.3: *Beliefs about close friends: HK identity*

---

- K.3.1-2 What is the average answer that 5 of your closest friends at HKUST would have chosen?
- K.3.1 Corresponding question: A.3.1
- K.3.2 Corresponding question: A.3.2
- 

Category K.4: *Beliefs about close friends: unhappiness with political status quo*

---

- K.4.1-2 What is the average answer that 5 of your closest friends at HKUST would have chosen?
- K.4.1 Corresponding question: A.4.1
- K.4.2 Corresponding question: A.4.4
- 

Category K.5: *Beliefs about close friends: aggressive pursuit of political rights*

---

- K.5.1 What is the average answer that 5 of your closest friends at HKUST would have chosen? Corresponding question: A.6.2
- 

**Panel L: Media consumption**

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Category L.1: *Frequency of news consumption*

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*Continued on next page*

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- L.1.1 How often do you browse the internet to read about news and current events? (1 = never; 6 = multiple times a day)
- 

Category L.2: *Pro-democratic source of media*

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- L.2.1 What are the top 3 internet websites that you regularly browse to consume information? (Select HK local websites among the top 2 choices)
- L.2.2 What are the top 3 news outlets that you regularly read for news (including the website, hard-copies of the newspaper, etc.)? (Select pro-democracy news outlets in HK among the top 2 choices)
- 

**Panel M: Political interest and knowledge**

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Category M.1: *Political interest*

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- M.1.1 How interested would you say you are in politics? (0 = not at all interested; 10 = extremely interested)
- 

Category M.2: *Political knowledge*

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M.2.1-4 Able to answer the following questions correctly:

M.2.1 Which of the following is a Democratic Party Legco member?

M.2.2 Which of the following is a pro-Beijing Legco member?

M.2.3 Which of the following is a leader of a newly founded party in HK that focuses on self-determination?

M.2.4 Which of the following is a leader of a newly founded party in HK that focuses on independence?

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ADDITIONAL OUTCOME VARIABLES

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**Panel N: Intensity of political support**

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Category N.1: *Aggressive pursuit of political rights*

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N.1.1 What do you think is the consequence of this veto decision, in terms of Hong Kong adopting fully democratic political institutions in the future? (0 = the veto decision is extremely harmful in leading Hong Kong to fully democratic institutions in the future; 10 = the veto decision is extremely beneficial in leading Hong Kong to fully democratic institutions in the future)

N.1.2 Some people support the use of violence to fight for Hong Kong citizens' political rights, while others oppose the use of violence. Where do you stand on this question? (0 = violence can never be justified; 10 = violence is currently justified)

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Table A.3: Alternative measures of anti-authoritarianism

	Anti-authoritarianism						Alternative outcomes	
	Baseline		Pro-democracy		Pro-independence		Aggressive approach	
	beta	s.e.	beta	s.e.	beta	s.e.	beta	s.e.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>C: Economic preferences</b>								
C.1: Risk tolerance	0.154***	[0.025]	0.139***	[0.026]	0.155***	[0.025]	0.166***	[0.026]
C.2: Patience	-0.025	[0.025]	0.068**	[0.027]	0.036	[0.025]	-0.034	[0.027]
C.3: Altruism	0.122***	[0.026]	0.117***	[0.027]	0.073***	[0.026]	0.042	[0.028]
C.4: Reciprocity	0.149***	[0.026]	0.173***	[0.025]	0.135***	[0.026]	0.128***	[0.028]
C.5: Preference for redistribution	0.137***	[0.025]	0.048*	[0.025]	0.014	[0.024]	0.016	[0.027]
<b>D: Personality traits</b>								
D.1: Big 5 - openness	0.075***	[0.026]	0.021	[0.027]	0.044*	[0.025]	0.061**	[0.026]
D.2: Big 5 - agreeableness	-0.019	[0.024]	0.041*	[0.025]	-0.031	[0.025]	-0.110***	[0.026]
D.3: Big 5 - conscientiousness	-0.051**	[0.025]	-0.004	[0.027]	-0.037	[0.026]	-0.040	[0.028]
D.4: Big 5 - neuroticism	0.024	[0.025]	0.028	[0.027]	0.055**	[0.025]	-0.051*	[0.027]
D.5: Big 5 - extraversion	-0.036	[0.024]	-0.012	[0.026]	-0.054**	[0.025]	-0.053**	[0.027]
<b>E: Cognitive ability</b>								
E.1: Cognitive reflection test	0.045*	[0.024]	0.046*	[0.025]	0.085***	[0.024]	0.036	[0.025]
E.2: University GPA	-0.115***	[0.026]	-0.093***	[0.025]	-0.076***	[0.026]	-0.039	[0.028]
<b>F: Economic status</b>								
F.1: HH economic & social status	-0.047*	[0.024]	-0.029	[0.025]	-0.001	[0.026]	-0.063**	[0.026]
F.2: Own projected economic status	-0.072***	[0.026]	-0.060**	[0.025]	-0.820***	[0.024]	-0.046*	[0.025]
<b>G: Background characteristics</b>								
G.1: Gender	0.207***	[0.048]	-0.002	[0.048]	0.067	[0.047]	0.343***	[0.049]
G.2: Birth year	-0.036*	[0.017]	-0.005	[0.017]	-0.027*	[0.016]	-0.045**	[0.018]
G.3: HK-oriented childhood env.	0.027	[0.027]	0.008	[0.026]	0.066***	[0.025]	-0.005	[0.027]
G.4: Religiosity	0.069	[0.058]	0.070	[0.061]	0.113*	[0.059]	0.177***	[0.060]
Observations	1576	-	1576	-	1576	-	1576	-
Mean DV	0.085	-	0.064	-	0.088	-	0.038	-
Std.Dev. DV	0.963	-	0.963	-	0.950	-	1.000	-

Coefficients estimated by a regression model predicting the pro-democracy index, pro-independence index, and more aggressive political approach index using all fundamental factors (summarized using z-score indices), one at a time. The z-score indices are calculated weighting by the inverse covariance of the standardized variables.

Table A.4: Robustness – sample weights

	Anti-authoritarianism			
	Unweighted		Weighted	
	beta	s.e.	beta	s.e.
	(1)	(2)	(3)	(4)
<b>C: Economic preferences</b>				
C.1: Risk tolerance	0.154***	[0.025]	0.168***	[0.025]
C.2: Patience	-0.025	[0.025]	-0.014	[0.026]
C.3: Altruism	0.122***	[0.026]	0.135***	[0.027]
C.4: Reciprocity	0.149***	[0.026]	0.161***	[0.027]
C.5: Preference for redistribution	0.137***	[0.025]	0.138***	[0.026]
<b>D: Personality traits</b>				
D.1: Big 5 - openness	0.075***	[0.026]	0.088***	[0.027]
D.2: Big 5 - agreeableness	-0.019	[0.024]	-0.001	[0.025]
D.3: Big 5 - conscientiousness	-0.051**	[0.025]	-0.040	[0.026]
D.4: Big 5 - neuroticism	0.024	[0.025]	0.022	[0.025]
D.5: Big 5 - extraversion	-0.036	[0.024]	-0.027	[0.025]
<b>E: Cognitive ability</b>				
E.1: Cognitive reflection test	0.045*	[0.024]	0.062**	[0.025]
E.2: University GPA	-0.115***	[0.026]	-0.122***	[0.027]
<b>F: Economic status</b>				
F.1: HH economic & social status	-0.047*	[0.024]	-0.035*	[0.025]
F.2: Own projected economic status	-0.072***	[0.026]	-0.068***	[0.025]
<b>G: Background characteristics</b>				
G.1: Gender	0.207***	[0.048]	0.192***	[0.049]
G.2: Birth year	-0.036*	[0.017]	-0.030*	[0.018]
G.3: HK-oriented childhood env.	0.027	[0.027]	0.024	[0.027]
G.4: Religiosity	0.069	[0.058]	0.093	[0.059]
Observations	1576	–	1576	–
Mean DV	0.085	–	0.067	–
Std.Dev. DV	0.963	–	0.960	–

Columns (1) and (2) present unweighted estimates from regressions using 1576 completed surveys from Hong Kong locals. Columns (3) and (4) present analogous estimates, but re-weighting each observation by the inverse of the response rate for that observation's gender  $\times$  cohort  $\times$  school cell.

Table A.5: Robustness – 2015 entering cohort (first-year students) only

	Anti-authoritarianism ( <i>stated pref.</i> )			
	All		2015 entering cohort	
	beta	s.e.	beta	s.e.
	(1)	(2)	(3)	(4)
<b>C: Economic preferences</b>				
C.1: Risk tolerance	0.146***	[0.026]	0.125***	[0.044]
C.2: Patience	0.038	[0.026]	0.038	[0.042]
C.3: Altruism	0.064**	[0.026]	0.056	[0.044]
C.4: Reciprocity	0.152***	[0.026]	0.149***	[0.039]
C.5: Preference for redistribution	0.005	[0.024]	0.008	[0.042]
<b>D: Personality traits</b>				
D.1: Big 5 - openness	0.034	[0.025]	0.031	[0.038]
D.2: Big 5 - agreeableness	-0.054**	[0.024]	-0.079**	[0.037]
D.3: Big 5 - conscientiousness	-0.048*	[0.025]	-0.042	[0.038]
D.4: Big 5 - neuroticism	0.082***	[0.025]	0.038	[0.039]
D.5: Big 5 - extraversion	-0.107***	[0.024]	-0.092**	[0.042]
<b>E: Cognitive ability</b>				
E.1: Cognitive reflection test	0.103***	[0.023]	0.057	[0.035]
E.2: University GPA	-0.085***	[0.025]	-0.007	[0.039]
<b>F: Economic status</b>				
F.1: HH economic & social status	-0.059**	[0.025]	-0.033	[0.043]
F.2: Own projected economic status	-0.108***	[0.024]	-0.067*	[0.037]
<b>G: Background characteristics</b>				
G.1: Gender	0.159***	[0.046]	0.248***	[0.076]
G.2: Birth year	-0.039**	[0.016]	–	–
G.3: HK-oriented childhood env.	0.022	[0.024]	0.084*	[0.043]
G.4: Religiosity	0.088	[0.059]	0.088	[0.098]
Observations	1576	–	502	–
Mean DV	0.109	–	0.047	–
Std.Dev. DV	0.932	–	0.874	–

Columns (1) and (2) present unweighted estimates from regressions using 1576 completed surveys from Hong Kong locals. Columns (3) and (4) present analogous estimates, but using 502 completed surveys from 2015 entering cohort (i.e., first-year) students.



Table A.6: Replication from earlier wave of survey in 2015

	Anti-authoritarianism					
	All subjects		Overlapping subjects		Non-overlapping subjects	
	beta from main wave	beta from 2015 wave	beta from main wave	beta from 2015 wave	beta from main wave	beta from 2015 wave
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel C: Economic preferences</b>						
C.1 Risk tolerance	0.152***	0.085***	0.103***	0.077**	0.211***	0.100**
C.2 Patience	-0.025	0.099***	-0.041	0.071**	-0.008	0.151**
C.3 Altruism	0.122***	0.009	0.110***	0.023	0.137***	-0.009
C.4 Reciprocity	0.149***	0.109***	0.109***	0.141***	0.190***	0.055
C.5 Preference for redistribution	0.137***	0.102***	0.126***	0.123**	0.158***	0.066
<b>Panel F: Economic status</b>						
F.1 HH economic & social status	-0.047*	-0.034	-0.047	-0.023	-0.047	-0.069
F.2 Own projected economic status	-0.072***	-0.063**	-0.062*	-0.067**	-0.084**	-0.058
<b>Panel G: Background characteristics</b>						
G.1 Gender	0.207***	0.278***	0.163**	0.215***	0.272***	0.382***
G.2 Birth year	-0.032*	-0.079***	-0.028	-0.065**	-0.044	-0.101***
G.3 HK-oriented childhood env.	0.027	0.002	0.029	0.017	0.024	-0.022
G.4 Religiosity	0.069	0.150**	0.055	0.097	0.091	0.232**

All regressions predict the anti-authoritarianism z-score index using fundamental factors (summarized by z-score indices), one at a time. Columns (1), (3), and (5) use the anti-authoritarianism z-score index and fundamental factor indices constructed from variables measured in the 2016 main wave of the survey. Columns (2), (4), and (6) use the anti-authoritarianism z-score index and fundamental factor indices constructed from variables measured in the fall 2015 wave of the survey. The 2015 anti-authoritarianism index does *not* include attitudes regarding the HK book seller event, voting plans in the 2016 LegCo election, participation plans in the 2016 July 1st protest, and donation decisions to Demosisto. The 2015 household economic & social status index does not include real estate assets; and, the 2015 own projected economic status index does not include students' subjective income projection at age 40. Columns (1)-(2) present estimates using all subjects from the relevant waves of the survey; columns (3)-(4) present estimates only using subjects who completed *both* 2015 and 2016 waves of the survey; and, columns (5)-(6) present estimates using subjects who only completed exactly one wave of the survey (2015 or 2016). Number of observations: all subjects from main (2016) wave: 1576; all subjects from 2015 wave: 1394; overlapping subjects: 877; non-overlapping subjects from main wave: 699; non-overlapping subjects from 2015 wave: 527.

Table A.7: Simultaneously determined factors

		Anti-authoritarianism						
		overall		stated pref.		revealed pref.		
	beta	s.e.	FDR adj. p-value	beta	beta	beta	mean ex.var.	std.dev. ex.var.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(7)
<b>Panel H: Beliefs about politics</b>								
Category H.1: <i>Beliefs about future political institutions</i>								
H.1.1	Optimistic about 2025 inst.	[0.071]	0.025	-0.409***	-0.037	0.144	0.352	
H.1.2	Optimistic about 2050 inst.	[0.073]	0.228	-0.252***	0.046	0.123	0.328	
	<b>z-score index</b>	[0.025]	–	-0.135***	0.001	-0.015	0.988	
Category H.2: <i>Beliefs about protest efficacy</i>								
H.2.1	Prob. of democracy via protest	[0.118]	–	-0.311**	0.162	0.322	0.205	
<b>Panel I: Beliefs about HKUST students (residualized)</b>								
Category I.1: <i>Beliefs about HKUST students: support for democracy</i>								
I.1.1	Pro-democratic political attitudes	[0.016]	0.409	-0.014	-0.013	-0.020	1.517	
I.1.2	No restriction on candidacy	[0.010]	0.409	0.000	-0.008	-0.030	2.331	
	<b>z-score index</b>	[0.024]	–	-0.013	-0.034	-0.017	1.009	
Category I.2: <i>Beliefs about HKUST students: support for HK independence</i>								
I.2.1	Prefer independent political inst.	[0.014]	0.005	0.001	-0.037***	0.007	1.717	
I.2.2	Prefer independent economic inst.	[0.014]	0.001	-0.036**	-0.048***	-0.029	1.762	
I.2.3	HK should be independent nation	[0.013]	0.001	-0.050***	-0.042***	-0.048	1.851	
	<b>z-score index</b>	[0.025]	–	-0.076***	-0.100***	-0.019	0.997	
Category I.3: <i>Beliefs about HKUST students: HK identity</i>								
I.3.1	HK national identity	[0.014]	0.007	-0.025***	-0.027**	-0.030	1.773	
I.3.2	HK cultural identity	[0.013]	0.001	-0.041***	-0.040***	-0.066	1.855	
	<b>z-score index</b>	[0.024]	–	-0.065***	-0.066***	-0.028	0.997	
Category I.4: <i>Beliefs about HKUST students: unhappiness with political status quo</i>								
I.4.1	HK is undemocratic today	[0.015]	0.042	-0.034**	-0.036**	0.000	1.585	

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		Anti-authoritarianism							
		overall		stated pref.		revealed pref.			
		FDR adj.		beta		beta		mean	
		beta	s.e.	p-value	beta	beta	beta	ex.var.	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	
								std.dev.	
								ex.var.	
I.4.2	Dissatisfied with life overall	-0.019	[0.018]	0.161	-0.038**	-0.018	0.026	1.339	
	<b>z-score index</b>	-0.053**	[0.025]	-	-0.068***	-0.052**	0.012	0.992	
Category I.5: Beliefs about HKUST students: aggressive pursuit of political rights									
I.5.1	Use of violence is justified	-0.053***	[0.017]	-	-0.076***	-0.035**	0.032	1.469	
<b>Panel J: Social life</b>									
Category J.1: Political social network									
J.1.1	Frequently discuss politics with friends	0.120***	[0.011]	0.001	0.116***	0.104***	4.339	2.193	
J.1.2	Tend to persuade others	0.085***	[0.011]	0.001	0.084***	0.076***	4.243	2.201	
J.1.3	Direct relative participated in OC	0.392***	[0.053]	0.001	0.249***	0.407***	0.305	0.460	
J.1.4	Schoolmate participated in OC	0.437***	[0.066]	0.001	0.484***	0.400***	0.855	0.319	
J.1.5	Friend participated in OC	0.518***	[0.058]	0.001	0.441***	0.535***	0.840	0.367	
J.1.6	Been persuaded on OC	0.459***	[0.047]	0.001	0.412***	0.451***	0.599	0.490	
J.1.7	Familiar with relatives' pol. att.	0.005	[0.009]	0.068	0.013	0.004	5.343	2.674	
J.1.8	Familiar with schoolmates' pol. att.	0.094***	[0.010]	0.001	0.089***	0.085***	5.208	2.186	
J.1.9	Familiar with friends' pol. att.	0.096***	[0.010]	0.001	0.097***	0.087***	5.035	2.300	
	<b>z-score index</b>	0.300***	[0.024]	-	0.280***	0.285***	0.064	0.974	
Category J.2: Sociability									
J.2.1	Total number of friends	0.002	[0.007]	0.644	0.004	0.004	3.011	3.394	
J.2.2	Currently non-single	-0.145**	[0.059]	0.027	-0.118**	-0.158***	0.769	0.421	
	<b>z-score index</b>	-0.039	[0.025]	-	-0.027	-0.039	-0.031	0.990	
<b>Panel K: Beliefs about close friends</b>									
Category K.1: Beliefs about close friends: support for democracy									
K.1.1	Pro-democratic political attitudes	0.018	[0.015]	0.767	0.003	0.022	0.061	1.575	
K.1.2	No restriction on candidacy	0.004	[0.009]	0.7670	0.019*	-0.004	0.042	2.574	
	<b>z-score index</b>	0.024	[0.024]	-	0.033	0.015	0.035	1.009	
Category K.2: Beliefs about close friends: support for HK independence									

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Anti-authoritarianism									
overall		FDR adj.		stated pref.		revealed pref.		mean	
beta	s.e.	p-value	beta	beta	beta	beta	beta	ex.var.	std.dev.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
-0.000	[0.013]	1.000	0.040***	-0.008	0.090	1.835			
0.001	[0.014]	1.000	0.034**	-0.009	0.045	1.763			
-0.027**	[0.013]	0.133	-0.029**	-0.018	0.054	1.976			
-0.031	[0.026]	-	-0.018	-0.033	0.043	0.980			
<b>z-score index</b>									
Category K.3: <i>Beliefs about close friends: HK identity</i>									
K.2.1	Prefer independent political inst.		0.065	-0.035**	0.116	1.757			
K.2.2	Prefer independent economic inst.		0.065	-0.034**	0.107	1.823			
K.2.3	HK should be independent nation		-	-0.071***	0.065	0.953			
<b>z-score index</b>									
Category K.4: <i>Beliefs about close friends: unhappiness with political status quo</i>									
K.4.1	HK is undemocratic today		1.000	0.131	0.060	1.564			
K.4.2	Dissatisfied with life overall		1.000	-0.008	0.036	1.420			
<b>z-score index</b>									
Category K.5: <i>Beliefs about close friends: aggressive pursuit of political rights</i>									
K.5.1	Use of violence is justified		0.641	-0.019	0.080	1.562			
<b>Panel L: Media consumption</b>									
Category L.1: <i>Frequency of news consumption</i>									
L.1.1	Frequently browse internet for news		-	0.184***	4.849	1.197			
Category L.2: <i>Pro-democratic source of media</i>									
L.2.1	HK local websites as top choices		0.014	0.106**	0.560	0.497			
L.2.2	Pro-democracy outlets as top choices		0.001	0.554***	0.896	0.305			
<b>z-score index</b>									
<b>Panel M: Political interest and knowledge</b>									
Category M.1: <i>Political interest</i>									
M.1.1	Extremely interested in politics		-	0.151***	4.527	2.338			

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Anti-authoritarianism							
overall		stated pref.		revealed pref.			
beta	s.e.	FDR adj. p-value	beta	beta	mean ex.var.	std.dev. ex.var.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
M.2.1	Know Democratic Party Legco member	0.235*** [0.048]	0.001	0.375***	0.153***	0.567	0.496
M.2.2	Know pro-Beijing Legco member	0.282*** [0.050]	0.001	0.350***	0.212***	0.683	0.466
M.2.3	Know self-determination leader	0.163*** [0.048]	0.001	0.318***	0.074	0.516	0.500
M.2.4	Know independence leader	0.307*** [0.068]	0.001	0.403***	0.197***	0.175	0.380
	<b>z-score index</b>	0.179*** [0.026]	–	0.263***	0.114***	0.056	0.998

Category M.2: *Political knowledge*

All regressions predict anti-authoritarianism z-score indices. One index, labelled “overall”, includes all variables; a second index, “stated pref.”, includes only responses to direct questions; and, a third index, “revealed pref.”, includes only self reported behavior and behavior in incentivized choices made in the context of the survey. The z-score indices (weighting by the inverse covariance of the standardized variables) and the FDR-adjusted p-values are computed following Anderson (2008). Coefficients are estimated using 1576 completed surveys from Hong Kong locals.