What Determines Student Acceptance of Politically Controversial Scientific Conclusions?

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Certain scientific conclusions are controversial, in that they are rejected by a substantial proportion of nonscientists despite an overwhelming scientific consensus. Science educators are motivated to help students understand the evidence behind the scientific consensus on these matters and to move students' views into alignment with those held by the vast majority of scientists, but their efforts are not always successful. In this article we use large-scale survey data to explore the nature, extent, and determinants of student resistance to scientific conclusions about evolution, anthropogenic climate change, and the importance of vaccination. We conclude that much student resistance has its source in identity-protective cognition, whereby science denial helps safeguard an individual's identity within a specific social group. Our findings indicate that for these students, supplying information is not enough to foster acceptance of scientific conclusions, and they suggest the need for interventions that address the connection between student identity and the acceptance of certain scientific conclusions.

Certain scientific conclusions belong to a unique category: those accepted by the overwhelming majority of scientists, yet rejected by a substantial proportion of the nonscientific public. Examples of these controversial conclusions include evolution in general (both as a fact and a theory), and human evolution specifically; anthropogenic climate change; and the safety of childhood vaccinations. In each of these three cases, some individuals who deny the science—that evolution occurs and humans are a product of evolutionary forces, that recent increases in global temperatures are largely due to human activities, and that the benefits of childhood vaccinations dramatically eclipse the risks—are reluctant to change their convictions when confronted with evidence presented by authorities in the respective disciplines.

It may not be surprising that professional scientists and science educators are perplexed by this recalcitrance on the part of the nonscientific public, particularly among students in science classes. In biology, for example, our learning goals typically include items such as "recognize the centrality of evolution to the study of biology" and "become practitioners of science, by applying scientific reasoning and the scientific method." When our students categorically reject conclusions supported by overwhelming empirical evidence, they are—in the case of evolution—repudiating a core tenet of the discipline and, in all cases, failing to apply the scientific methods we model in our teaching. Because we want our students to reason like scientists, their resistance to scientifically noncontroversial conclusions is disheartening.

To determine how best to address science denial among college students, we must first know what explains some students' rejection of scientific conclusions, because different explanations will point toward different remedies. For instance, if science denial results from a simple lack of scientific knowledge, it can be addressed through improved teaching techniques. But if science denial stems from different sources, it must be dealt with in a different way. In this study, we examine a large set of data on college student beliefs, attitudes, aptitude, and background, in an effort to determine what is at the root of science denial in this population.

Background

Acceptance of evolution

The vast majority of biologists view evolutionary theory as the foundation for modern biology (Hermann, 2008; Moore, Brooks, & Cotner, 2011), yet according to recent polls, only 48% of Americans agree that humans and other living things have evolved over time (Newport, 2012; Pew Forum on Religion and Public Life, 2005). This essential part of biology is controversial (Chinsamy & Plagányi, 2008; Hildebrand, Bilica, & Capps, 2008) in a way that other components of biology—including gene theory, germ theory, and cell theory—are not (Rutledge & Sadler, 2011).

Several factors are known to correlate with acceptance of evolution, including being an analytic thinker (Gervais, 2015), having high "need for cognition" (Kudrna, Shore, & Wassenberg, 2015), and being taught evolution but not creationism in high school (Moore & Cotner, 2009). Other factors correlate with denial of evolution, such as religious belief (Gervais, 2015; National Center for Science Education, 2010; Moore & Cotner, 2009; Rissler, Duncan, & Caruso, 2014) and political conservatism (Cotner, Brooks, & Moore, 2014). The situation is likely confounded by the fact that biology educators lack consensus on their role in promoting student acceptance of evolution and may themselves perceive a conflict between the biology they are teaching and religious convictions (Barnes & Brownell, 2016).

Acceptance of anthropogenic climate change

Anthropogenic climate change refers to the recent phenomenon of rising global temperatures that are caused predominantly by human activities. The data supporting both the claim of average increases in global temperature and human causality are overwhelming (Pachauri & Meyer, 2014). According to a study of over 1,300 climate-change scientists, between 97% and 98% agreed that humans are causing climate change (Anderegg, Prall, Harold, & Schneider, 2010). In an analysis of almost 12,000 abstracts from the peer-reviewed literature, more than 97% of the papers that expressed an opinion on climate change explicitly supported anthropogenic climate change (Cook et al., 2013). Yet in spite of the strong scientific evidence and expert support of anthropogenic climate change, the public is unconvinced. According to a 2014 Pew research study, only 50% of U.S. adults agreed that climate change is due to human activity (Funk & Rainie, 2015).

Opinions on the reality of anthropogenic climate change have been heavily studied; they vary by political affiliation, self-reported and actual knowledge about science and climate, the ability to use quantitative reasoning, and whether a person is egalitarian or hierarchical (Dunlap & McCright, 2008; Hamilton, 2011; Kahan, 2015; Kahan et al., 2012).

Acceptance of vaccination benefits

Vaccination is among the greatest public health achievements of the 20th century (Kroger, Sumaya, Pickering, & Atkinson, 2011). Not only do vaccinations protect vaccinated individuals against diseases (Fiore, Bridges, & Cox, 2009; Ward et al., 2005), but when a significant proportion of the population is vaccinated, this leads to indirect protection for at-risk groups such as infants, the elderly, and those who cannot be vaccinated (Fine, 1993). Although vaccination has been associated with extremely rare adverse events, such as anaphylactic shock, vaccination is overwhelmingly safe (DeStefano, Price, & Weintraub, 2013; Maglione et al., 2014), and any small risks are eclipsed by the millions of lives saved and diseases eradicated (Fenner, Henderson, Arita, Jezek, & Ladnyi, 1988).

In spite of the evidence of the health benefits of vaccines, a portion of the U.S. population refuses to vaccinate. A 2011 survey of 11,206 parents found that only 60.2% had fully vaccinated their children at age 24 months (Smith et al., 2011). Concerns of parents include skepticism about the benefits of vaccination and fear of significant adverse effects, including autism, despite the numerous studies that have demonstrated that vaccination is not associated with increased risk of autism (Doja & Roberts, 2006).

Vaccination hesitancy is poorly understood, but recent work has begun to identify its correlates. In one study, parents who delayed and refused vaccination were likely to have an income more than 400% of the federal poverty level, to include a married mother over the age of 30, to speak English, to have graduated from college, to have private health insurance, and to be non-Hispanic White (Smith et al., 2011). In a more recent study, however, significantly more respondents who viewed vaccinations as unsafe were younger and less educated (Pew Research Center, 2015).

Identity-protective cognition

It is clear from the literature on science denial that a person's acceptance of evolution, anthropogenic climate change, and vaccination are influenced by several factors, with political affiliation among them. Self-identified conservatives are more likely than liberals to reject certain scientific conclusions (Cotner et al., 2014; Dunlap & McCright, 2008; Funk & Rainie, 2015).

TABLE 1

Survey respondents and response rates.

	Fall 2014		Spring 2015	
	Number of respondents	Response rate	Number of respondents	Response rate
Postsemester survey	1430	88.22%	1448	76.37%

But the picture is complex, because there is an *interaction* between political inclination and science knowledge when it comes to science acceptance (Kahan, 2015). Several studies have shown that there is a positive association between how much people know about scientific topics and their acceptance of certain scientific conclusions in self-identified liberals, but not among conservatives. When conservatives are exposed to information about climate change, they seem to dig in, so that the more conservatives know about (for instance) climate change, the more resistant they are to accepting it (Kahan et al., 2012; McCright & Dunlap, 2011a).

Why is this so? *Motivated cognition* is the phenomenon of individuals (re)interpreting evidence from their own perspectives (Chen, Duckworth, & Chaiken, 1999), and when the motivation is protecting their in-group identity, this is referred to as *identity-protective cognition* (Kahan, Braman, Gastil, Slovic, & Mertz, 2007), or IPC. More specifically, the idea is that individuals who identify with a certain group will interpret evidence in a way that aligns with the group's perspective, to safeguard their sense of membership in that group (Cohen, 2003; Kahan et al., 2007; Kahan et al., 2012). This is consistent with social identity theory, which hypothesizes that people sort themselves into groups based on perceived similarities, and that when opinions are strongly associated with either the in-group or the out-group, individuals will be motivated to agree with the opinion held by their in-group (Brewer & Chen, 2007; Samuels & Zucco, 2013).

As Kahan (2010) put it, "Because accepting [climate change] could drive a wedge between them and their peers, they have a strong emotional predisposition to reject it" (p. 296). When confronted by evidence that challenges their community's worldview, they dismiss or reinterpret that evidence while rehearsing and elaborating the reasons for which they reject its conclusions.

It should be said at this point that political liberals are not immune to IPC. Several studies have shown that self-identified liberals show a tendency to reject evidence about issues like the safety of the underground disposal of nuclear waste; of nanotechnology; or of genetically modified foods (Kahan, 2010; Kahan, Braman, Cohen, Gastil, & Slovic, 2010). We focus on IPC among self-identified conservatives in this article because in recent years, political conservatives have made the denial of evolution, climate change, and (to some degree) vaccination safety a prominent part of their collective identity (for examples, see State Republican Convention excerpts pertaining to evolution in Cotner et al., 2014; Kliegman, 2014; McCright & Dunlap, 2011b; Mooney, 2006).

Given this account of IPC, if IPC is at work among our students, it may provide insight into why our best efforts to teach the facts fail to change the minds of science deniers and may even make things worse.

In an attempt to illuminate the factors underlying our students' denial of evolution, anthropogenic climate change, and the benefits of vaccinations, we delivered presemester and postsemester surveys to over 3,000 students enrolled in the college of biological sciences at a large, public research university in fall 2014 and spring 2015. Unlike most research on IPC, which infers IPC from other phenomena, our surveys contained questions that were specifically designed as a test of the IPC hypothesis. These "identity questions" asked students whether people who accept certain scientific conclusions are different from them, as a way of determining, independently of political affiliation, whether their identity was tied to the denial of these scientific conclusions. For example, one question read:

> People who accept that humans are causing climate change are very different from me.

Our main research question was:

> What factors determine college students' science acceptance at a point in time, and whether a student's science acceptance will change over time? In particular, do our data support the IPC hypothesis advanced by Kahan and others?

Our hypothesis was that political affiliation would explain some of students' inclination to accept scientific conclusions about climate change, vaccination, and evolution, but that individuals' tendency to protect their group identity, as captured by the "people different from me" metric, would be the main driver.

Research methods

Participants

The participants in this study were students who took an introductory level biology class at our university in fall 2014 or spring 2015 and who completed a pre- or a postsemester survey (or both). The survey questions are included in the Appendix. The number of students who completed the surveys varied; the precise figures are shown in Table 1.

The total pool of survey respondents was 54.2% female and 45.8% male, with a median age of 19.0 years. The respondents were 69.6% White, 12.8% international, 10.2% Asian, 3.1% Black, and 2.9% Hispanic, and they were 21.2% first-year students, 42.2% sophomores, 20.0% juniors, 13.0% seniors, and 3.6% graduate students.

Measures

To assess students' level of acceptance of the scientific conclusions that are the focus of this study, we created a survey containing 22 questions designed to elicit student views on anthropogenic climate change, evolutionary theory, and the appropriateness of vaccinating children. All of the questions were delivered online at the beginning and end of the fall 2014 and spring 2015 semesters and were answered using a 5-point response scale from *strongly agree* to *strongly disagree* (see the Appendix).

We validated the survey by means of exploratory factor analysis, extracting three aggregated factors, each of which comprised several individual survey items. The underlying constructs, which are measured on a 1–5 scale, were:

- climate change acceptance (six items; alpha = .860),
- evolution acceptance (five items; alpha = .868), and
- vaccination acceptance (five items; alpha = .773).

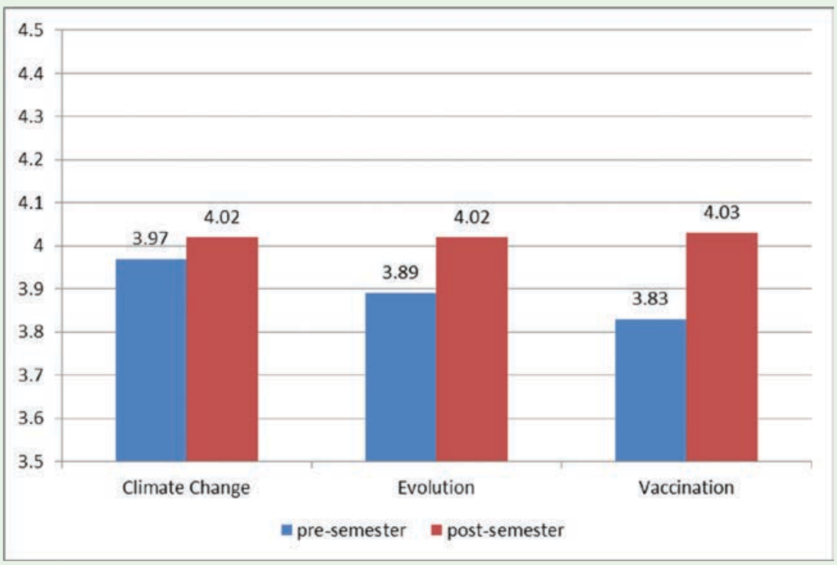
The postsemester survey included a single question about students' political affiliation as well as the three identity questions of the type described previously and that were explicitly designed to measure the degree to which survey respondents felt a community-based sense of identity with respect to acceptance or nonacceptance of the science of climate change, evolution, and vaccination. These questions did not form part of the three aggregated factors, but were treated as independent predictor variables.

Some indication that the "people different from me" questions measure what they were intended to measure was provided by the fact that they were correlated much more strongly with their corresponding science acceptance variables than with the *other* science acceptance variables. For instance, "People who accept that humans are the result of evolutionary processes are very different from me" was correlated with evolution acceptance at an r value of −.721, but more weakly with climate change acceptance (r = .484) and with vaccination acceptance (r = .373).

As educators, we are interested in two types of outcome variables. We want to know where our students end up with respect to science acceptance, at the end of the semester, and we also want to know how much students' views have *changed* over the semester. Hence we examined

FIGURE 1

Mean levels of science acceptance.



both postsemester levels of science acceptance and normalized gains in science acceptance. Normalized gains, calculated as (post-pre)/(total possible-pre), are a measure that captures how much change in science acceptance has occurred for each student who took both the pre- and postclass surveys, taking into account the level at which he or she started.

FIGURE 2

Mean normalized gains.

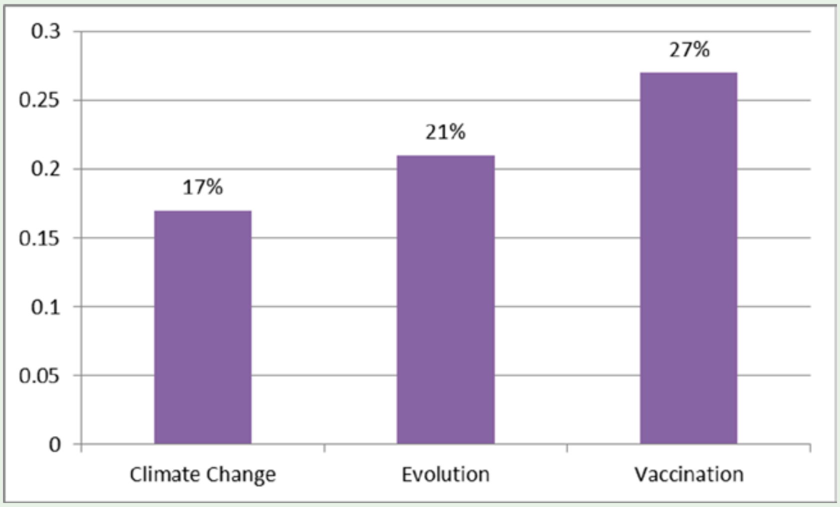
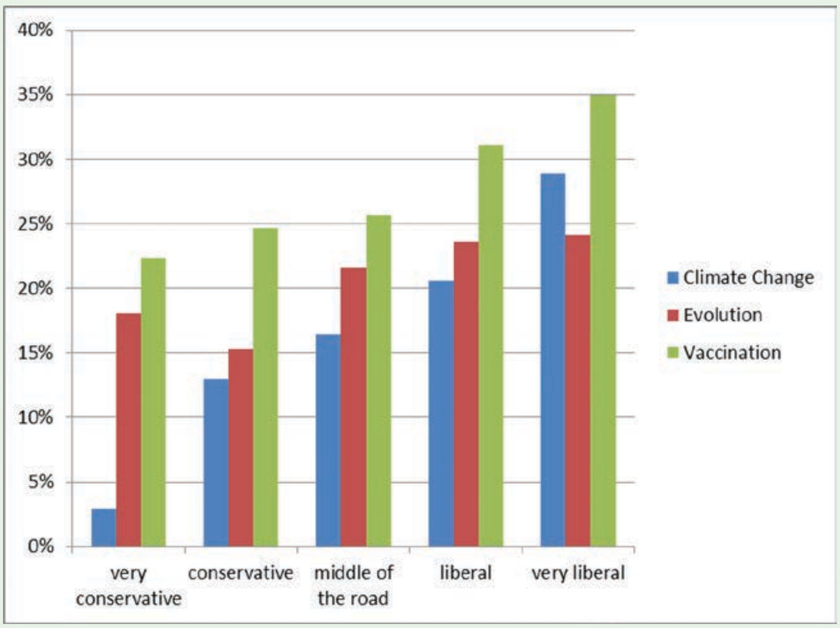


FIGURE 3

Mean normalized gains, by political inclination.



Findings

Students began the semester with high levels of acceptance of all three variables, but on average, students' acceptance of anthropogenic climate change, evolutionary theory, and the appropriateness of vaccinating children increased over the course of the semester (see Figure 1).

Normalized gains were positive for all three variables, ranging from over 17% (climate change) to 27% (vaccination; see Figure 2).

Changes in student acceptance of climate change and evolution were smaller than those in acceptance of vaccination. We hypothesize that this is due to the relative newness of vaccination as a matter of public debate along with the news of a measles outbreak in the United States during this study, along with a mass e-mail to the university informing staff and students of a case of measles on campus.

As other studies have found, students' political inclination was strongly related to their degree of acceptance of these three scientific conclusions and to gains in acceptance over time. In general, the more liberal a student was, the greater his or her normalized gains on all three variables were likely to be. Self-reported "very conservative" students barely moved at all regarding climate change acceptance over the course of the semester (see Figure 3).

Overall, students' views of climate change were the most stable of the three variables, whereas student beliefs about evolution and vaccination changed to a greater degree across the semester.

Predictive results

To investigate the determinants of climate change, evolution, and vaccination acceptance, we constructed a series of ordinary least squares

(OLS) regression models incorporating the following information about students as predictor variables:

- demographics (e.g., age, sex, ethnicity, academic level),
- academic aptitude (composite ACT score, GPA),
- political inclination, and
- responses to the identity questions ("people different from me").

(In the tables, for each dependent variable we analyze, we report only the OLS model with the greatest explanatory power, or in other words the model that accounts for the largest amount of variation in the dependent variable. Predictor variables are reported only if they contribute to the best-fitting model. *N* varies between models due to missing data.)

Political inclination

Students' self-reported political inclination was strongly related to their postsemester science acceptance. As the data in Tables 2, 3 and 4 show, the differences among liberal and conservative students were most pronounced with respect to postsemester climate change and least pronounced when it came to vaccination acceptance. On average, the more liberal a student, the greater was his or her acceptance of all three controversial positions. However, political inclination had a weaker relationship with *changes* in acceptance of these topics over the semester, once other variables were controlled for—it was a significant predictor only for evolution acceptance.

Identity

The "people who accept ___ are very different from me" questions were strong negative predictors of their corresponding postsemester science acceptance variables. These identity-focused variables had twice to four times as strong an effect on postsemester science acceptance than political affiliation did. Furthermore, the identity variables were strong negative predictors of *change* in students' science acceptance, as measured by normalized gains, whereas political affiliation was not nearly as consistent a predictor of change.

Of our two aptitude variables, ACT score was the best predictor. It predicted postsemester acceptance of all three topics but not gains. None of our demographic variables—gender, race, age, academic level, etc.—were consistently significant predictors of postsemester science acceptance or of gains in science acceptance.

Discussion

We return to our primary research question, which was:

> What factors determine college students' science acceptance at a point in time, and whether a student's science acceptance will change over time? In particular, do our data support the IPC hy-

TABLE 2

Ordinary least squares (OLS) regressions for student acceptance of the science of anthropogenic climate change.

	Model 1: Postclass acceptance	Model 2: Normalized gains in acceptance
Identity ("People who accept climate change are very different from me")	−.418/−.574*** (.014)	−.137/−.357*** (.011)
Political inclination	.175/.253*** (.013)	.010/.027 (.011)
Degree of explicit instruction	.014/.017 (.014)	−.011/−.024 (.012)
Academic level	(Variable not used)	−.012/−.031 (.011)
Composite ACT	.013/.061** (.004)	.003/.027 (.003)
White	.002/.001 (.033)	.035/.034 (.028)
Constant	3.985*** (.125)	.352** (.105)
N	1639	1244
Adjusted R^2	.516	.136
F Test	350.007***	33.658***

Note. Cell entries are unstandardized/standardized OLS beta coefficients with standard errors in parentheses; see http://www.statisticshowto.com/standardized-beta-coefficient/ for more information.
*$p < .05$. **$p < .01$. ***$p < .001$.

pothesis advanced by Kahan and others?

First, the college students in our study finished the semester with relatively high average levels of science acceptance, and those levels did change over the course of the semester (see figures). Our study was not designed to determine the *causes* of these changes—they could be due to taking college classes, or even just to 15 weeks of intellectual maturation—but the changes were clear and substantial.

Second, group identity—as measured by our identity questions ("people who accept xxx are very different from me")—was by far the most important driver of science acceptance. In our multivariate models, political inclination, composite ACT score, and academic level were all significant predictors of postsemester science acceptance, but the amount of influence these variables had on science acceptance paled in comparison to the impact of the identity variables. And in our models that predicted *change* in science acceptance, almost all predictors apart from the identity variables were null. These findings provide strong support for the IPC hypothesis. When other variables are controlled for, group identity emerges as the strongest driver of science acceptance, both at a point in time and across time.

Not all students demonstrated equivalent gains over the semester. For example, women and White students experienced significantly greater gains than did their male and non-White counterparts. However, neither sex nor ethnicity (nor any of the other demographic variables) played a significant role in our regression models, which indicates that the nominally greater gains in science acceptance found among women and White students are not fundamentally due to sex or to ethnicity.

Overall, we found that it was easier to predict students' science acceptance at a point in time than it was to predict the degree to which their science acceptance would change over time. All of our models were weaker in terms of variance explained when we tried to predict change, indicating that change in science acceptance is determined in part by factors outside of the models.

Vaccination acceptance at a point in time was substantially more difficult to predict than climate change or evolution acceptance. We hypothesize that student beliefs about vaccination are determined by a greater variety of factors than their beliefs about climate change and evolution, in part because the latter have been topics of public debate for many years, whereas vaccination as a polarizing topic is relatively recent and does not fall as neatly along political lines (Nyhan, Reifler, Richey, & Freed, 2014).

Our findings add to the literature on IPC in three ways. First, because

TABLE 3

Ordinary least squares (OLS) regressions for student acceptance of the science of evolution.

	Model 1: Postclass acceptance	**Model 2: Normalized gains in acceptance**
Identity ("people who accept evolution are very different from me")	–.527/–.646*** (.015)	–.141/–.374*** (.011)
Political inclination	.151/.178*** (.015)	–.019/–.049 (.011)
Degree of explicit instruction	–.020/–.009 (.036)	.018/.019 (.026)
Academic level	.053/.057** (.015)	–.012/–.028 (.011)
Composite ACT	.019/.073*** (.004)	–.003/–.021 (.003)
White	.087/.038* (.039)	.056/.052 (.029)
Constant	4.018*** (.182)	.563*** (.134)
N	1616	1258
Adjusted R^2	.568	.126
F Test	354.418***	31.185***

Note. Cell entries are unstandardized/standardized OLS beta coefficients with standard errors in parentheses; see http://www.statisticshowto.com/standardized-beta-coefficient/ for more information.
*p < .05. **p < .01. ***p < .001.

we measured political inclination separately from degree of identification with a community that rejects the three scientific conclusions we studied, we were able to disentangle the effects of these two variables on science acceptance and thus provide a more direct measure of the impact of identity protection. So although we observed that political inclination was associated with degree of science acceptance, our predictive analysis indicated that the *explanation* for this fact has much less to do with political inclination as such than with identity— in other words, with the degree to which people see science accepters as like or unlike themselves.

Second, our analysis extends the IPC hypothesis from understanding science acceptance at a point in time to comprehending *change* in science acceptance. We found that people's identification with people who deny certain scientific conclusions was predictive of their science acceptance at a point in time, and indeed was much more strongly predictive than their political inclination. And we found that the way people self-identify was so strongly predictive of change in science acceptance that it seemed to "crowd out" political inclination, so that self-reported liberalism or conservatism was not at all (or much less) predictive of change.

Third, our findings apply the IPC hypothesis as an explanation for science denial not only to climate change, but also to evolution and to vaccination. These three subjects have very different histories as topics of public debate and the political and public-policy dynamics surrounding them are quite disparate. But when it comes to what determines whether a person accepts or denies the science behind each topic, all three display a similar pattern: political inclination matters, but identity matters much more.

TABLE 4

Ordinary least squares (OLS) regressions for student acceptance of the science of vaccination.

	Model 1: Postclass acceptance	**Model 2: Normalized gains in acceptance**
Identity ("people who accept vaccinations are very different from me")	–.301/–.475*** (.014)	–.122/–.321*** (.011)
Political inclination	.081/.121*** (.014)	.015/.037 (.011)
Degree of explicit instruction	.044/.043* (.021)	.071/.116*** (.016)
Academic level	.052/.071** (.015)	.016/.035 (.012)
Composite ACT	.031/.155*** (.004)	–.001/–.004 (.003)
White/Non-white	.066/.037 (.038)	.045/.041 (.030)
Constant	3.384*** .141	.338** (.111)
N	1612	1257
Adjusted R^2	.336	.123
F Test	137.002***	30.396***

Note. Cell entries are unstandardized/standardized OLS beta coefficients with standard errors in parentheses; see http://www.statisticshowto.com/standardized-beta-coefficient/ for more information.
*$p < .05$. **$p < .01$. ***$p < .001$.

We conclude by encouraging educators and science communicators to recognize the challenge posed by IPC. Given the strength of group identity, and the cognitive steps individuals will take to safeguard their sense of membership in a group, simply teaching the evidence is likely to be insufficient (or, even worse, counterproductive). We suggest, as emphasized in Kahan (2010) and Kahan et al. (2010), that educators should ensure that the people presented as experts in these topics are politically diverse, with special attention to finding people with whom conservative students may identify. One compelling example of conservative representation for climate change is former South Carolina Representative Bob Inglis. This conservative Republican received a Profile in Courage Award for his work on promoting climate change understanding among conservatives (a speech in which he talks about his climate change views is at https://www.youtube.com/watch?v=GIXMf76Fpbg&t=2s, and the radio show "This American Life" did a story on his becoming a climate change advocate, available here https://www.thisamericanlife.org/radio-archives/episode/495/hot-in-my-backyard?act=2). Additionally, of interest to our students, one of our local weather forecasters who has been active in the Republican Party made this video about climate change (https://www.youtube.com/watch?v=cG49p2iEx5I).

Furthermore, we suggest that educators teach students about IPC. They can start by introducing students to the idea that factors that have nothing to do with scientific knowledge influence people's opinions on scientific topics. There are somewhat amusing examples in the climate change literature where it has been shown that factors such as current outdoor temperature, indoor temperature, and exposure to a word-find activity that contained "hot" words such as *scorch* and *sizzle* impact a person's reported concern and belief about climate change (Joireman, Truelove, & Duell, 2010; Li, Johnson, & Zaval, 2011; Riesen & Critcher, 2011). IPC can be presented alongside these examples as another factor outside of scientific information that influences people's opinions on a topic. We believe that acknowledging the external influences on our scientific opinions is an important first step in science acceptance.

Although we do not yet have data on the efficacy of these approaches, we know that simply emphasizing the facts is not likely to be helpful, and without trying new approaches to education on these topics, we risk exacerbating the problems that we hope to solve. ■

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Appendix

Note: With the exception of the political affiliation question, all questions below were answered on a 5-point scale from *strongly agree* to *strongly disagree*. Some questions were reverse coded for analysis.

There is convincing evidence that the Earth's average temperature has shown recent increases (global warming).

Science acceptance questions

- There is convincing evidence that human activities are altering the earth's climate.
- Most scientists accept that human activities are altering the earth's climate.
- The available data are unclear about whether evolution actually occurs.
- Organisms existing today are the result of evolutionary processes that have occurred over millions of years.
- The age of the earth is less than 20,000 years.
- Human beings on earth today are the result of evolutionary processes that have occurred over millions of years.
- Vaccines can eradicate disease and prevent serious illness and death.
- There is NO convincing evidence connecting autism with vaccination.
- When a critical portion of a community is vaccinated for a contagious disease, the likelihood of an outbreak is significantly reduced.
- Most scientists agree that the benefits of vaccination outweigh the costs.
- Children who can be vaccinated, should be vaccinated, in order to protect those who cannot be vaccinated (adults and children with immune-system disorders, very young children, pregnant women).
- The theory of evolution cannot be correct, since it disagrees with the accounts of creation in many religious texts.
- Human activities have too small of an impact to affect something as large as the earth's climate.
- Climate change is a serious problem.
- Climate change poses a serious risk to human health, safety, and prosperity.
- People who accept that humans are causing climate change are very different from me.
- People who accept that human beings are the result of evolutionary processes are very different from me.
- People who accept that the benefits of childhood vaccinations outweigh the risks are very different from me.
- Which of the following describes your political affiliation?
  a. Very liberal
  b. Liberal
  c. Middle of the road
  d. Conservative
  e. Very conservative

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