

The 2020 Survey of Evolutionary Scholars on the State of Human Evolutionary Science

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ABSTRACT

A decade ago, we conducted the first systematic survey of the state of the evolutionary approach to human research. Respondents were optimistic in their views that evolutionary research would become more accepted and prominent, although they tended to believe that growth and advancement of the field would be a slow process. We conducted a second wave in 2020, recruiting previous respondents and members of five relevant academic societies to participate in an on-line survey. Respondents' ($N = 579$) assessments of the state of evolutionary research in both their departments and fields generally resembled those in expressed in 2010. Most respondents reported gradual progress in the prominence of evolutionary perspectives in the past decade and had expectations such progress would continue, though their views were less optimistic than those of a decade previous. Many of the themes regarding the benefits and challenges of using an evolutionary perspective were repeated; however, many respondents reported an overall political shift in academia toward ideologies and interests that were more hostile toward evolutionary approaches to understanding human psychology and behavior.

KEYWORDS

Academia, Evolutionary Psychology, Evolutionary Anthropology, Graduate Training

INTRODUCTION

A decade ago, we conducted the first systematic survey of the state of evolutionary approaches to human research (Kruger et al., 2012). Our objective was to assess scholars' perceptions of academic and career issues, as well as challenges facing scholars, and to gauge the academic strength and productivity of human evolutionary research. Overall, respondents were optimistic in their views that

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evolutionary research would become more accepted and prominent, and although advancement would be gradual, there was a sense that progress was inevitable.

And yet, research has shown that there remains a great deal of resistance to evolutionary theory and evolutionary approaches to human behavior in particular. In the United States, about half of adults do not accept that humans developed from earlier species (National Science Board, 2016, Miller et al., 2006). Many American college students have similar beliefs (Bleske-Rechek & Donovan, 2015; Jakobi, 2010), and enter college courses in the biological sciences with numerous scientific misconceptions (Abenes & Caballes, 2020; Bleske-Rechek & Donovan, 2015; Cunningham & Wescott, 2009). Several scholars have highlighted ways to improve understanding and education in this area, focusing on why many people seem to have trouble grasping the essentials of evolution, as well as its application to humans, and suggesting approaches that might provide some correction (Allmon, 2011).

It is not just the lay public or college students who resist evolutionary theory or its applications. Von Hippel and Buss (2017) surveyed members of the Society for Experimental Social Psychology, to explore how political ideology predicts attitudes and acceptance toward evolutionary-based explanations for various social psychological findings. Although almost all members reported accepting evolutionary theory, less agreement was reported for using evolutionary theory to understand social preferences and attitudes. The authors ascertained that the lack of consensus is due to political ideology, as those on the 'left' (i.e., liberals promoting egalitarianism and opposing social hierarchy) generally reject evolutionary applications. Some members were concerned that findings based on evolutionary psychology would be misused, and they overlooked the potential value of integrating social and evolutionary psychology.

Although religion and politics have both been implicated in resistance to evolutionary perspectives (Snow & Dibner, 2016), some evidence suggests that scientific knowledge of evolutionary processes predicts people's level of acceptance (Shtulman & Calabi, 2012; Weisberg et al., 2018), and that novel, educational approaches can be successful in improving knowledge (Short & Hawley, 2015; Wilson et al., 2019). Yet in many areas, including at the college level, such education is still lacking (Glass et al., 2012), as seen in the persistence of many misunderstandings of evolutionary psychology (Confer et al., 2010). These misunderstandings are likely to still impact on scholars in the field (Fisher et al., 2004; Fisher et al., 2009). Evolutionary scholars continue to address misconceptions regarding evolutionary approaches to human behavior (e.g., Al-Shawaf, 2019, 2020; Al-Shawaf, & Buss, 2011; Confer et al., 2010; Liddle et al., 2011).

In 2020 we conducted a second wave of the survey with a slightly modified instrument, enabling direct comparisons of results for most survey topics. We examine the current experiences of evolutionary scholars on the job market, in their departments, at conferences, in research collaborations, and in their field in general. Comparisons between 2010 and 2020 results help assess the degree of progress in evolutionary scholarship.

METHODS

We compiled a recruitment database of e-mails based on 1) respondents in the first waves of the survey who agreed to participate in future research and provided an e-mail address, 2) The membership database for the International Society for Human Ethology, 3) The membership database and conference programs of the NorthEastern Evolutionary Psychology Society (2008-2019), and 4) conference programs of the Human Behavior and Evolution Society (2014-2019). E-mail invitations were sent on 31 July 2020 with reminders for those who had not completed surveys on 8 November and 22 November 2020. Invitations to participate were also distributed to the members of the European Human Behaviour and Evolution Association and the Polish Society for Human and Evolution Studies in general e-mails from the organizational leadership to the societies' contact lists.

Our population of interest is scholars (both faculty and current students) who employ evolutionary approaches to research on human psychology and behavior, and who demonstrate their interest through membership in a directly relevant scientific society. There were 767 unique e-mail contacts for the 2010 survey, yielding a 38.7% response rate from 297 completed surveys. There were 3076 unique e-mail contacts for the 2020 survey, yielding a 18.8% response rate from 579 completed surveys. There is inflation in the e-mail counts relative to the population of interest, those who are actively involved in relevant research. Many of those listed as authors or co-authors of conference presentations may be students who do not pursue a career in relevant research, or faculty who are involved in a particular project but would not identify as an evolutionary scholar (e.g., a statistician, etc.). Although obvious duplicates were removed from the contact list, some individuals may have been represented by multiple e-mail addresses, for example if they changed institutions and/or their names, or used multiple e-mail addresses (e.g., both university and private e-mail addresses) across presentations. For comparison, there are typically 500-550 participants at annual meetings of the Human Behavior and Evolution Society, the largest relevant conference.

We adapted the Qualtrics on-line survey from the previous wave. Nearly all questions were retained to enable comparability. "Funding agencies" was added as a category to questions regarding the level of interest in, and understanding of, evolutionary perspectives. We collected data from 31 July 2020 to 16 December 2020 and generated a quantitative and qualitative report for each individual survey item. Responses that were more than 70% complete were retained for analyses. We calculated proportions and conducted comparisons between waves with independent samples *t*-tests for continuous measures and Chi-Square tests for categorical measures. Figures include the entire range of response options.

Participant Descriptives

Respondents ($N = 579$) were 61% men, 38.3% women, and 0.7% another gender identity; average age was 45.61 years ($SD = 14.36$, range 20-89). Respondents were based in North America (59.7%; 49.4% United States, 6.0% Canada, 1 from Mexico), Europe (28.6%), South America (4.6%), Asia (4.3%), and Oceania (2.8%); 48.4% of respondents (42.6% of faculty) had changed institutions

since the previous iteration of the survey. Comparisons are made with results from 2010 survey wave respondents ($N = 297$), who were 65% male, 45% female; average age was 40.05 years ($SD = 12.78$, range 20-82). 2010 respondents were based in North America (67.3%; 60.5% United States, 6.8% Canada), Europe (22.6%), South America (4.1%), Asia (4.2%), and Oceania (2.3%).

Respondents completed their terminal degrees between 1966 and 2020 ($M = 2005$, $SD = 13$), with 4.3% still in progress. The year respondents were first exposed to an evolutionary perspective on human psychology and/or behavior ranged from 1957 to 2019 ($M = 1999$, $SD = 12$). Respondents began conducting or collaborating on academic research in general between 1958 and 2019 ($M = 2000$, $SD = 13$). The year respondents began conducting or collaborating on academic research from an evolutionary perspective ranged from 1962 to 2019 ($M = 2003$, $SD = 11$). On average, there was a three year-period between when respondents began academic research and when they began academic research from an evolutionary perspective ($M = 3.02$, $SD = 5.95$, range: 0-43). This length of this time lag has been decreasing over time (as assessed by the number of years in which researchers have been in the field), $r(545) = -.499$, $p < .001$.

Table 1. Respondents by current position

Current Position	2010 ($N = 297$)		2020 ($N = 579$)	
	<i>n</i>	%	<i>n</i>	%
Undergraduate Student	8	2.7	6	1.0
Graduate Student	90	30.3	73	12.6
Post-doctoral Fellow	9	3.0	22	3.8
Assistant Professor or equivalent	39	13.1	67	11.6
Associate Professor or equivalent	34	11.4	114	19.7
Full Professor or equivalent	46	15.5	155	26.8
Research Faculty, non-tenure track (minor teaching load, if any)	31	10.4	47	8.1
Teaching Faculty, non-tenure track, full-time	16	5.4	11	1.9
Teaching Faculty, non-tenure track, part-time	(NTT in row above)		17	2.9
Emeritus or Retired Professor	9	3.0	35	6.0
Research Staff (Academic)	1	0.3	5	0.9
Research Staff (Industry)	0	0.0	6	1.0
Other	13	4.7	19	3.3
Unknown	1	0.3	2	0.3

Table 2. Description of respondents' institutions

What is your institution?				
Institution	2010 (N = 297)		2020 (N = 579)	
	n	%	n	%
Doctoral Level University (awards doctoral degrees in most departments where this is the typical practicing degree)	216	72.7	424	73.2
Masters Level College or University (Master's degree is usually the highest awarded)	51	17.2	71	12.3
Liberal Arts College or University (Bachelor's degree is the highest awarded)	15	5.1	36	6.2
Community College (Associates degree is the highest awarded)	4	1.4	3	0.5
Academic Research Institute	1	0.3	18	3.1
Other	9	3.0	24	4.1
Unknown	1	0.3	3	0.5

Table 3. Major field of study

What is your major field of study?				
Major Field of Study	2010 (N = 297)		2020 (N = 579)	
	n	%	n	%
Psychology	166	55.9	335	57.9
Anthropology	70	23.6	104	18.0
Biology	24	8.1	35	6.0
Sociology	1	0.3	10	1.7
Ecology	3	1.0	7	1.2
Economics	3	1.0	7	1.2
Philosophy	5	1.7	6	1.0
Political Science	3	1.0	5	0.9
English	2	0.7	5	0.9
Medicine	6	2.0	4	0.7
Law	2	0.7	3	0.5
Public Health	0	0.0	2	0.3
Other	11	3.7	54	9.3
Unknown	1	0.3	2	0.3

Table 4. Current department

What department(s) are you in? (inclusive)				
Department	2010 (N = 297)		2020 (N = 579)	
	n	%	n	%
Psychology	139	48.6	275	47.5
Anthropology	63	21.2	94	16.2
Biology	21	7.3	51	8.8
Public Health	1	0.3	17	2.9
Sociology	2	0.7	13	2.2
Medicine	4	1.4	10	1.7
Ecology	0	0.0	9	1.6
Economics	2	0.7	9	1.6
Philosophy	7	2.4	8	1.4
Education	0	0.0	7	1.2
English	5	1.7	7	1.2
Business	0	0.0	6	1.0
Communication	2	0.7	6	1.0
Interdisciplinary Studies	1	0.3	6	1.0
Political Science	4	1.4	5	0.9
Law	2	0.7	5	0.9
Neuroscience	2	0.7	5	0.9
Social Sciences	2	0.7	5	0.9
Zoology	0	0.0	4	0.7
Criminal Justice	0	0.0	3	0.5
Linguistics	0	0.0	3	0.5
Marketing	3	0.9	3	0.5
Human Development	1	0.3	3	0.5
Cognitive Science	1	0.3	3	0.5
Computer Science	1	0.3	3	0.5
Other	25	8.5	51	8.8
Unknown	11	3.7	6	1.0

RESULTS

1.0: The State of Evolutionary Research on Humans

Respondents' assessments of issues related to the state of evolutionary research on humans were generally similar to those in 2010 (See Table 5). There were no differences in respondents' beliefs regarding the relative difficulty for an

evolutionist to obtain a position in one's field, expectations for future changes in this difficulty, extent of self-identification as an evolutionist when applying for one's current position or if applying for a position not specifically advertised for an evolutionist, or the extent to which being an evolutionist has affected one's career standing. There were small differences in perceived trends in obtaining positions and the prominence of evolutionary research in one's discipline. Current respondents perceived a greater trend for obtaining positions becoming more difficult for an evolutionist compared to a non-evolutionist, perceived smaller advances in the prominence of evolutionary research in the past ten years, and expected smaller advances in the prominence of evolutionary research in the next ten years.

Table 5. Comparisons for items on the status of the field: 2010 vs. 2020

Item	2010	2020	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>	Figure
Relative difficulty for an evolutionist to obtain a position in one's field	3.69	3.70	0.17	783	.863	0.01	1
Change in relative difficulty for an evolutionist to obtain a position in one's field	2.62	2.87	3.73	772	.001	0.30	2
Expected change in relative difficulty for an evolutionist to obtain a position in one's field	2.69	2.81	1.70	772	.090	0.13	3
Extent of self-identification as an evolutionist when applying for their current position	3.69	3.54	-1.38	782	.169	-0.11	4
Extent to which one would identify as an evolutionist if currently applying for a job not specifically advertised for an evolutionist	3.62	3.42	-2.15	784	.032	-0.17	5
Perceived extent to which being an evolutionist has affected one's career standing	4.64	4.51	-0.98	772	.327	-0.08	6
Perceived change in prominence of evolutionary research compared to ten years ago	3.87	3.68	-3.05	780	.002	-0.24	7
Predicted prominence of evolutionary research within one's discipline ten years from now	3.86	3.64	-3.48	779	.001	-0.28	8

Note. *t* = Student's test statistic, *df* = degrees of freedom, *p* = probability level, *d* = Cohen's effect size; .2 = small, .5 = medium, .8 = large.

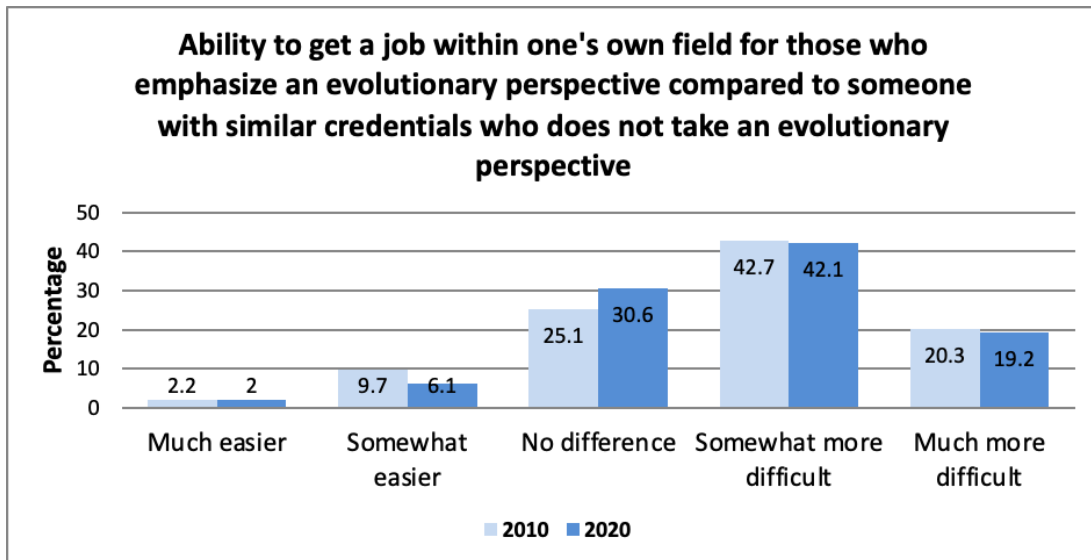


Figure 1. How much easier or more difficult do you think it is for someone emphasizing an evolutionary perspective to get a job in your field, compared to someone with roughly the same credentials who does not take an evolutionary perspective?

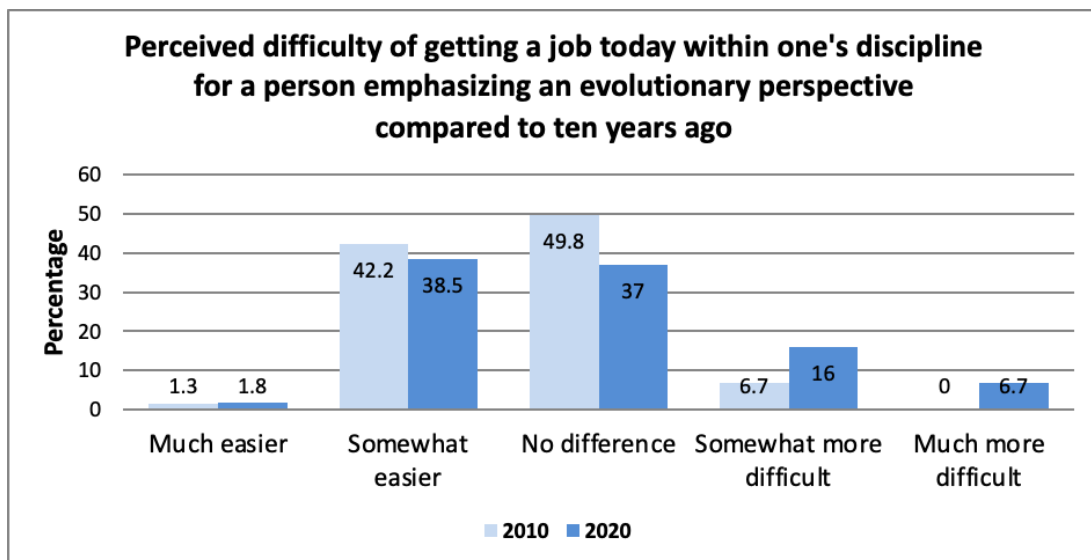


Figure 2. Compared to ten years ago, how much easier or more difficult do you think it is for someone emphasizing an evolutionary perspective to get a job in discipline?

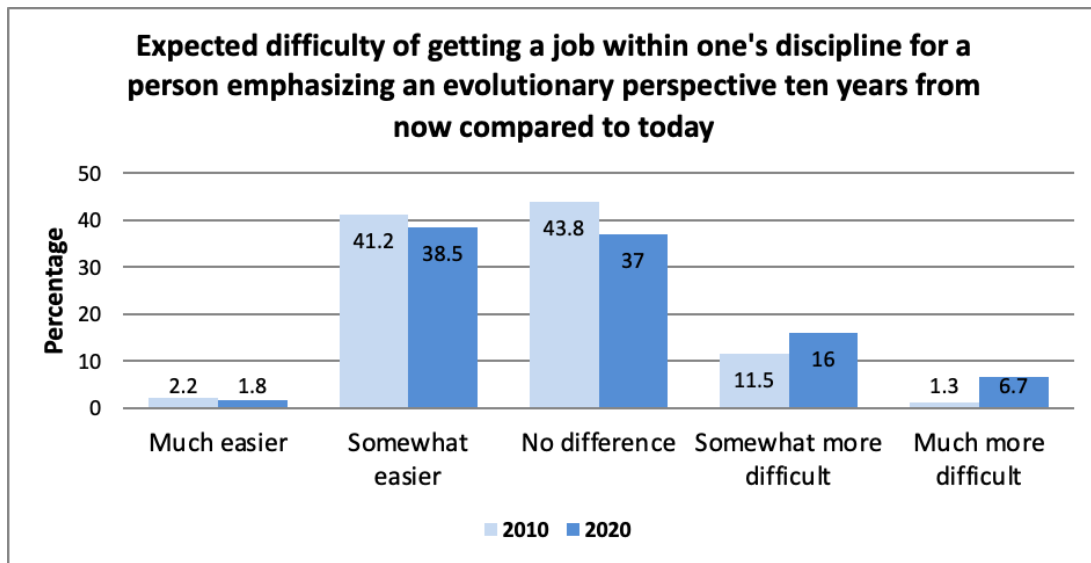


Figure 3. Compared to today, how much easier or more difficult do you think it will be for someone emphasizing an evolutionary perspective to get a job in your discipline ten years from now?

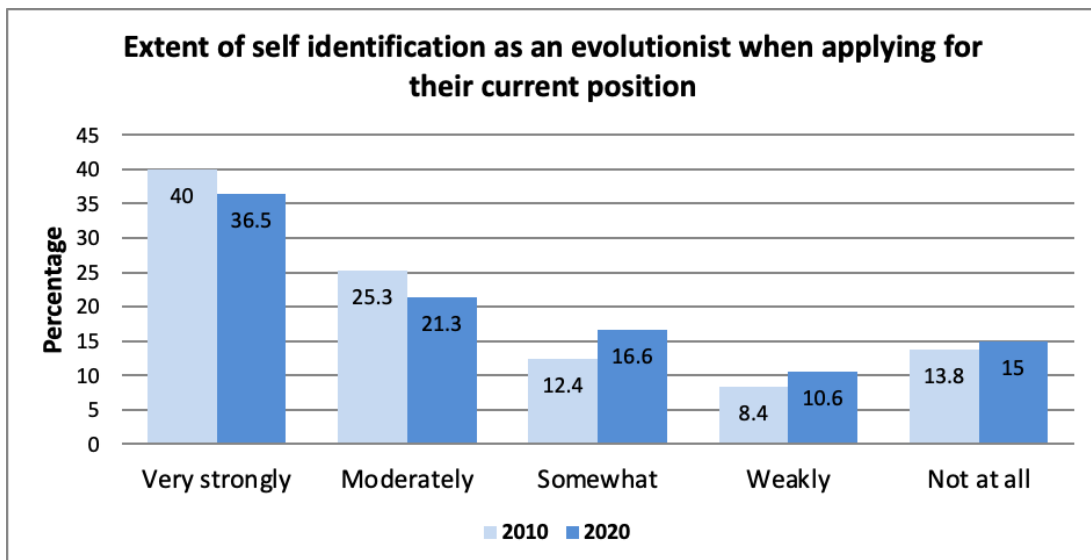


Figure 4. To what extent did you identify yourself as an evolutionist when applying for your current position?

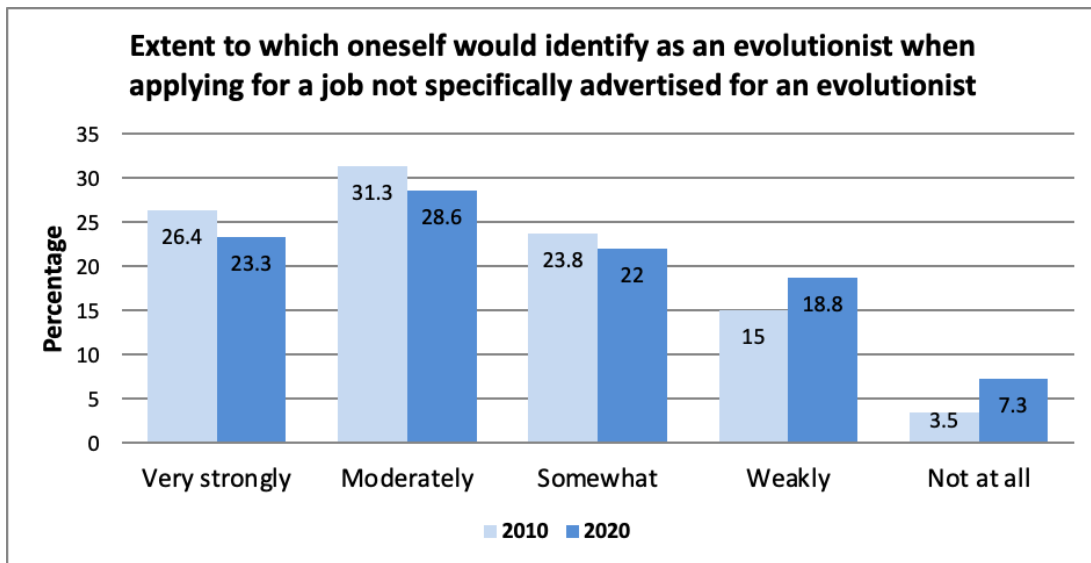


Figure 5. If for some reason you were to go on the job market in the next year, to what extent would you market yourself as an evolutionist when applying for positions not specifically advertised for an evolutionist?

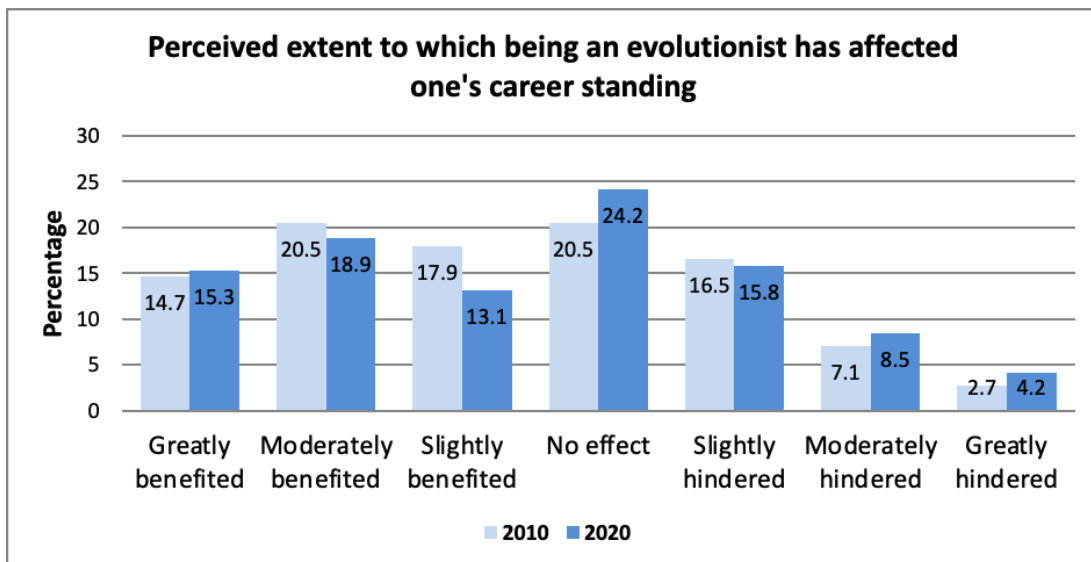


Figure 6. How do you think being an evolutionist has affected your career standing?

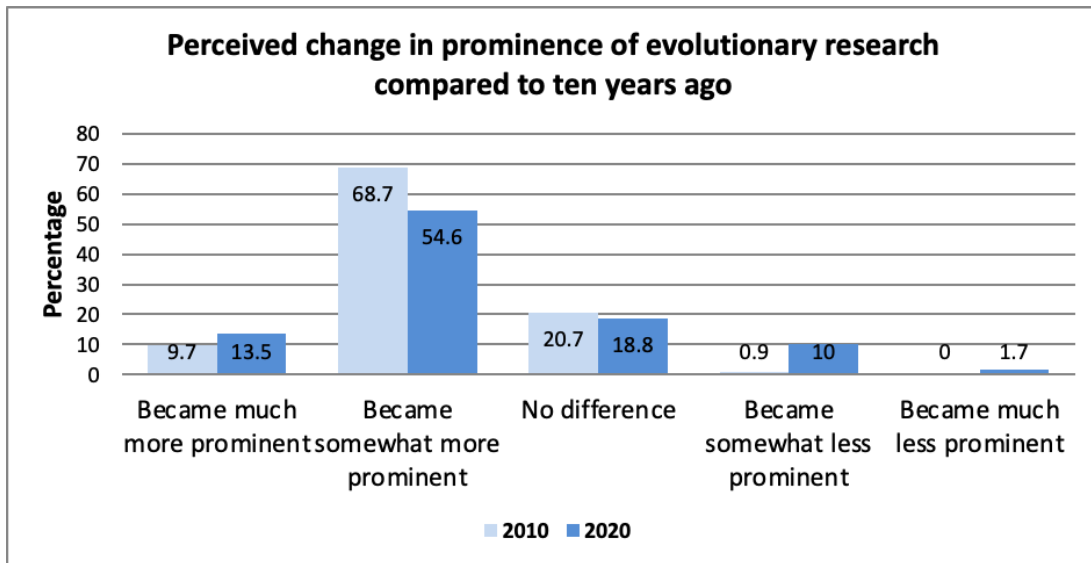


Figure 7. Compared to ten years ago, how has the prominence of evolutionary research changed?

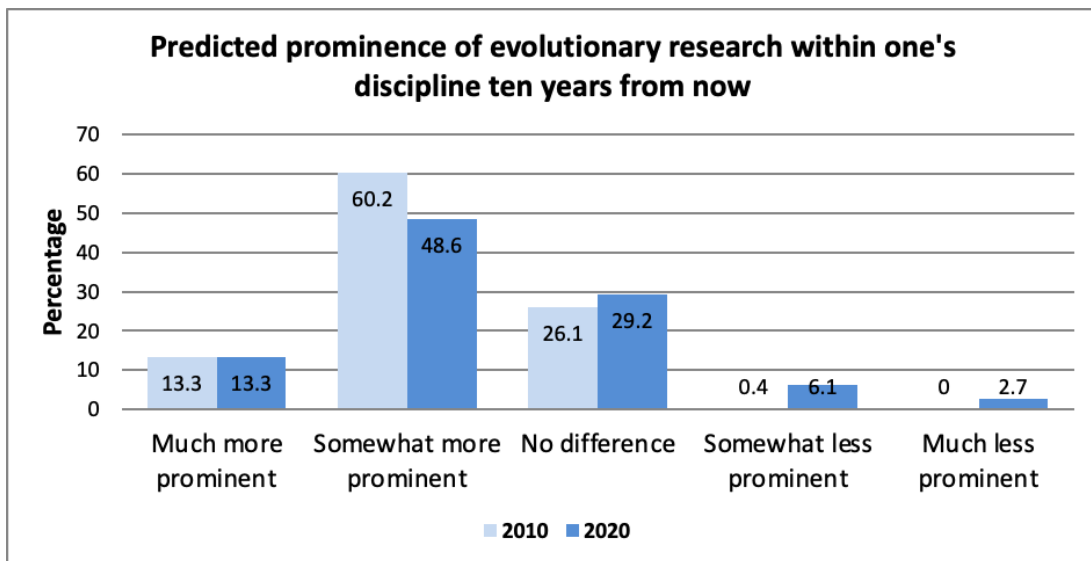


Figure 8. Compared to today, how prominent do you think evolutionary research will be in your discipline five years from now?

2.0: Departmental and External Conditions Regarding Evolutionary Research

There were no changes in the reported availability of evolutionary coursework in one's department between 2010 and 2020 (See Table 6). Departments were less likely to have a recent Darwin Day event in 2020 than in 2010, but otherwise did not differ in the availability of evolutionary events and activities (See Table 7). There was a small difference for a greater number of graduate-level evolutionary courses available and no difference for the number of undergraduate courses available (See Table 7). There were no differences in the perceived levels of interest in evolutionary perspectives on human psychology and/or behavior among department faculty, department graduate students, department undergraduates, academics in one's field, or the general public. Although understanding of evolutionary perspectives on human psychology and/or behavior was rated somewhat higher for department faculty in 2020 compared to 2010, there were no differences for the other groups.

Respondents elaborated on these issues in open-ended comments. Participant experiences varied considerably, ranging from "The theory of evolution may as well not exist for my department," to "The whole department is about understanding human behavior from an evolutionary perspective." The most frequent theme was being the only evolutionary scholar in the department, "I'm an army of 1," or being in the minority among perspectives. Although those in Psychology and Anthropology also reported these experiences, those working in other departments more often remarked that their department or field was generally hostile to evolutionary perspectives or lacked a basic understanding. Some respondents reported that other faculty members were actively hostile, disparaging evolutionary approaches to students or obstructing administrative tasks such as updating course descriptions. One department spun off a research center to separate faculty with different (i.e., evolutionary) perspectives. Interests in evolutionary approaches were sometimes bimodally distributed, often related to sub-discipline program affiliations. Some respondents remarked that hostility was endemic and pervasive in their field, whereas others reported increasing hostility to evolutionary approaches in their departments. This hostility was often said to be tied with increasing trends of "political correctness" and emphasis on "social justice" issues. On the other hand, some respondents saw their department as very supportive of evolutionary approaches, especially when their department was recognized as prominent in evolutionary research. Some respondents based in biology departments remarked that evolutionary theory was pervasive in their department, though other faculty may be skeptical of applying evolutionary theory to humans.

Table 6. Departmental availability of evolutionary coursework

Does your department have any of the following? (Percentage responding “Yes”)			
	2010 (N = 297)	2020 (N = 579)	p
PhD in an explicitly evolutionary program	22.9	21.6	.659
Masters in an explicitly evolutionary program	18.2	17.3	.738
Bachelors in an explicitly evolutionary program	9.4	19.7	.906
Graduate concentration or certificate in evolutionary studies	9.4	5.9	.052
Undergraduate concentration or certificate in evolutionary studies	7.4	6.4	.570
Graduate level evolutionary coursework	36.4	35.4	.780
Undergraduate level evolutionary coursework	49.8	54.1	.236

Note. *p*-values indicate results for Chi-Square tests.

Table 7. Departmental availability of evolutionary events and activities

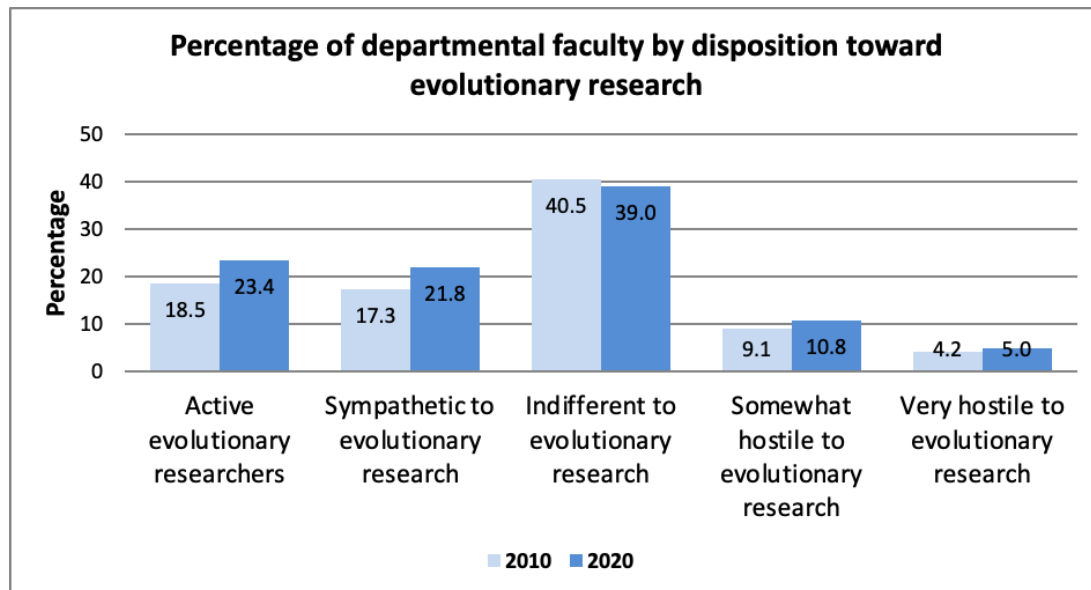
Departmental availability of events with an evolutionary focus (Percentage responding “Yes”)			
	2010 (N = 297)	2020 (N = 579)	p
An ongoing speakers’ series including external guest speakers	22.2	19.3	.316
A speakers’ series including external guest speakers that is now complete	10.1	10.9	.723
Individual external guest speakers	45.1	45.6	.893
Individual internal speakers, not for a regular class	28.6	26.8	.562
A Darwin Day event	17.8	11.4	.008
Some other event with an evolutionary theme	21.5	19.9	.557

Note. *p*-values indicate results for Chi-Square tests.

Table 8. Departmental conditions regarding evolutionary research on humans

Item	2010	2020	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>	Figure
Graduate courses available*	1.11	2.39	4.09	594	.001	0.34	
Undergraduate courses available	1.68	2.06	1.07	828	.284	0.08	
Proportion of Department faculty by orientation toward evolutionary perspectives							
Active researcher	18.5	24.03	2.65	820	.008	0.20	9
Sympathetic	17.3	21.52	2.84	821	.005	0.22	9
Indifferent	40.52	38.62	-	820	.434	-	9
Somewhat hostile	9.06	10.89	1.59	818	.113	0.12	9
Very hostile	4.22	4.93	0.84	819	.403	0.06	9

Note. *t* = Student's test statistic, *df* = degrees of freedom, *p* = probability level, *d* = Cohen's effect size; .2 = small, .5 = medium, .8 = large. *Excludes departments without graduate level coursework.

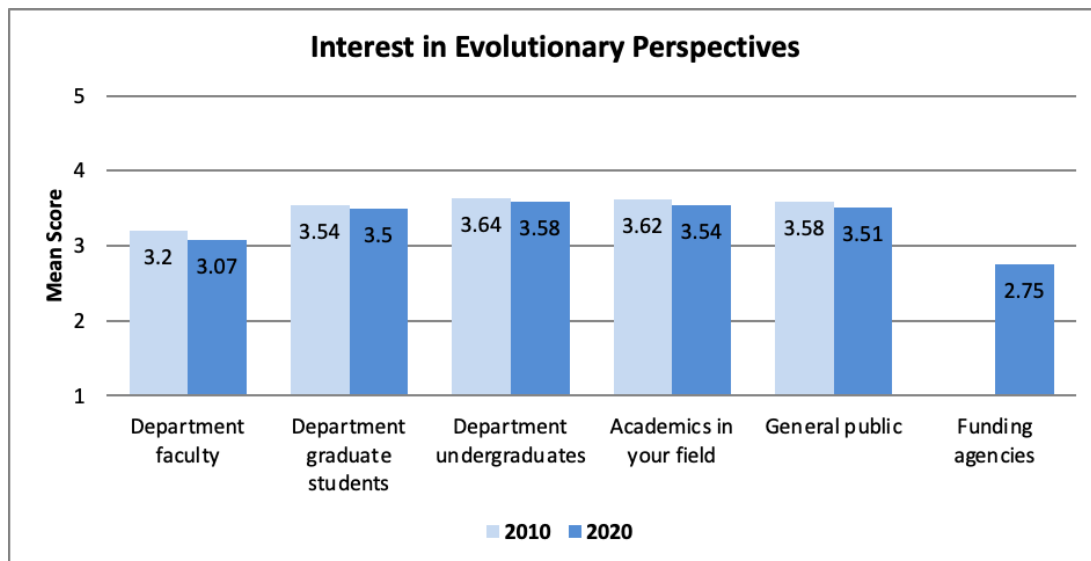
**Figure 9.** Including yourself, what proportions of faculty members in your department would you say fit the categories below regarding evolutionary research?

Note. In 2010, respondents provided raw number of faculty members in each category. In 2020, respondents estimated proportions with sliding scales that were forced to sum to 100%.

Table 9. Interest in and understanding of evolutionary perspectives on human psychology and/or behavior

Item	2010	2020	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>	Figure
Interest in evolutionary perspectives							
Department faculty	3.16	3.07	-1.00	810	.317	-0.08	10
Department graduate students	3.52	3.51	-0.16	721	.874	-0.01	10
Department undergraduates	3.63	3.6	-0.38	769	.702	-0.03	10
Academics in your field	3.62	3.53	-1.1	797	.273	-0.09	10
General public	3.52	3.48	-0.48	812	.631	-0.04	10
Understanding of evolutionary perspectives							
Department faculty	2.10	2.34	2.52	798	.012	0.20	11
Department graduate students	2.39	2.29	-1.15	712	.250	-0.09	11
Department undergraduates	2.15	2.00	-2.08	763	.038	-0.16	11
General public	1.41	1.49	1.76	811	.079	0.13	11

Note. *t* = Student's test statistic, *df* = degrees of freedom, *p* = probability level, *d* = Cohen's effect size; .2 = small, .5 = medium, .8 = large.

**Figure 10.** Interest in evolutionary perspectives on human psychology and/or behavior

Note. Response options were 5 = Very interested, 4 = Moderately interested, 3 = Somewhat interested, 2 = Very little interest, 1 = Not interested at all.

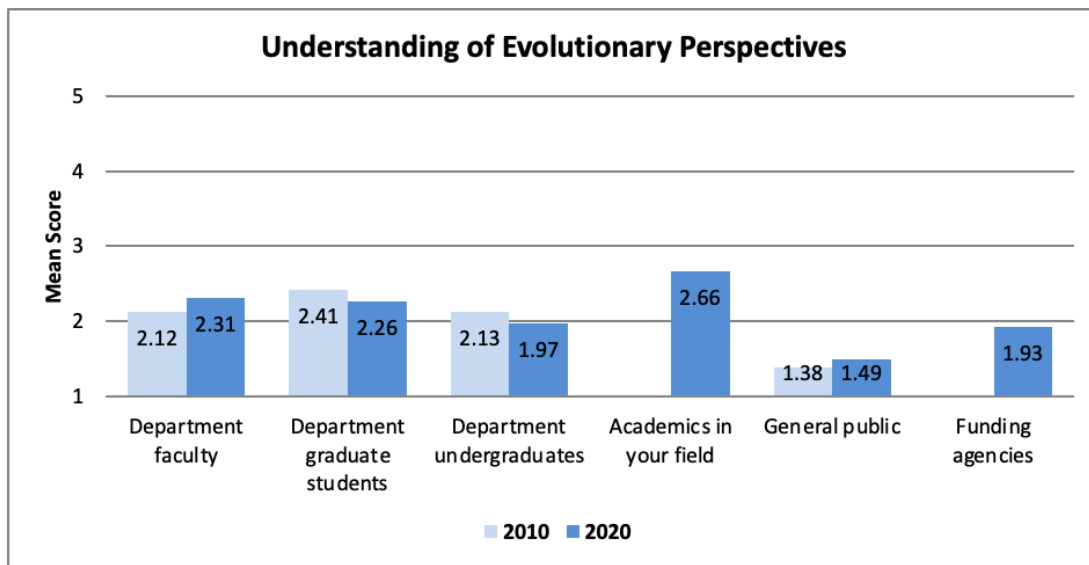


Figure 11. Understanding of evolutionary perspectives on human psychology and/or behavior

Note. Response options were 5 = Excellent, 4 = Very good, 3 = Good, 2 = Fair, 1 = Poor.

3.0: Conferences

Current respondents attended evolutionary themed conferences somewhat less frequently than 2010 respondents (See Table 10). Current respondents were somewhat less likely to perceive evolutionary themed conferences as more collegial in comparison to other conferences they attended frequently than 2010 respondents. Also, current respondents were somewhat less likely to self-identify as an evolutionist at non-evolutionary conferences compared to 2010 respondents. On average, respondents have been attending evolutionary themed conferences for 14 years ($M = 13.54$, $SD = 9.91$; 25%, 50%, and 75% quartiles: 6, 11, 20).

Respondents elaborated on these issues in open-ended comments. Many respondents valued conferences for both scientific content and socialization with colleagues. Some were particularly glad for the ability to interact with others who understood their research, especially those who did not have like-minded colleagues at their institutions. Others did not believe that the benefits of conferences justified the time and expense required to attend. Some remarked that after discovering evolutionary conferences, they were no longer interested in attending general Psychology conferences. Some thought that mainstream Psychology and humanities conferences were becoming more hostile to evolutionary theory, or that mainstream Sociology and Anthropology conferences had become so ideological that they were a waste of time. Some found the quality of evolutionary conferences higher than general conferences, both in the quality of presentations and the quality of critiques of their own and others' work. A few respondents remarked that evolutionary

conferences were cliquish (having insider-crowds), “strife with sexism and racism,” or “more biased against women.”

Many respondents noted that there was more cultural variation across evolutionary conferences than between evolutionary conferences and non-evolutionary conferences. Some respondents preferred the collegiality of smaller conferences, others did not believe that smaller conference had enough valuable content to justify attending. Those from smaller institutions seemed especially appreciative of the collegiality of smaller conferences. Some conferences were seen as very collegial, others were seen as more hostile or cliquish. Different respondents saw the same society’s conference as having a “bro-culture vibe” or too much focus on “social justice BS.” There were small proportions of respondents who had very contrasting perspectives on conference cultural issues. Some respondents remarked that the intrusion of political ideology and “social justice” concerns were “having a chilling effect.” Others remarked, “the patriarchy at evo/bio/anthro conferences is unbearable” and “Culture at conferences concerned with the study of evolutionary topics often feature a large cohort of (white, older, male, heterosexual, cis-gender) researchers who identify as ‘objective’ scientists, eschew the notion that their biases or the biases of the culture in which they live could have any possible impact on their research, and are desperately out of touch with modern American cultural innovations that make such narrow ways of thinking obsolete.” Some respondents noted that an evolutionary conference invited prominent critics of evolutionary approaches for keynote talks, but these speakers refused to take any audience questions, undermining the presumed intent of creating constructive dialogue.

Table 10. Conferences

Item	2010	2020	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>	Figure
Frequency of evolutionary themed conference attendance	3.87	3.57	-4.08	853	.001	-.30	12
Perceived collegiality of evolutionary themed conferences compared to other conferences attended	3.77	3.56	-2.99	773	.003	-0.23	13
Self-identification as an evolutionist at non-evolutionary conferences	4.17	3.89	-3.44	778	.001	-0.27	14

Note. See Figures 12, 13, and 14 for scale values, *t* = Student’s test statistic, *df* = degrees of freedom, *p* = probability level, *d* = Cohen’s effect size; .2 = small, .5 = medium, .8 = large.

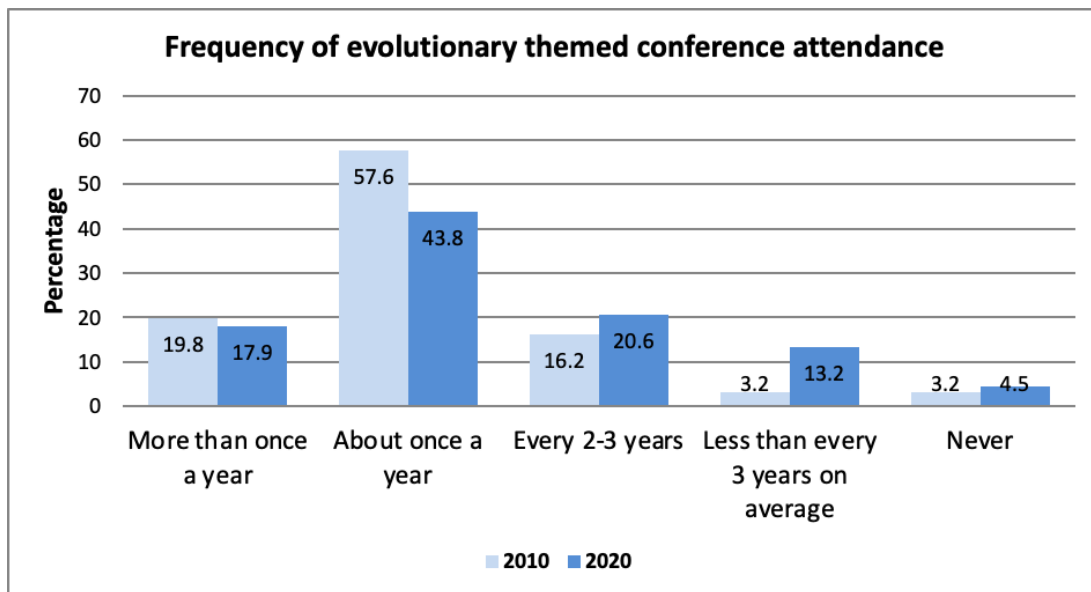


Figure 12. How frequently do you attend evolutionary themed conferences? (Prior to 2020)

Note. Response options were 5 = More than once a year, 4 = About once a year, 3 = Every 2-3 years, 2 = Less than every 3 years on average, 1 = Never.

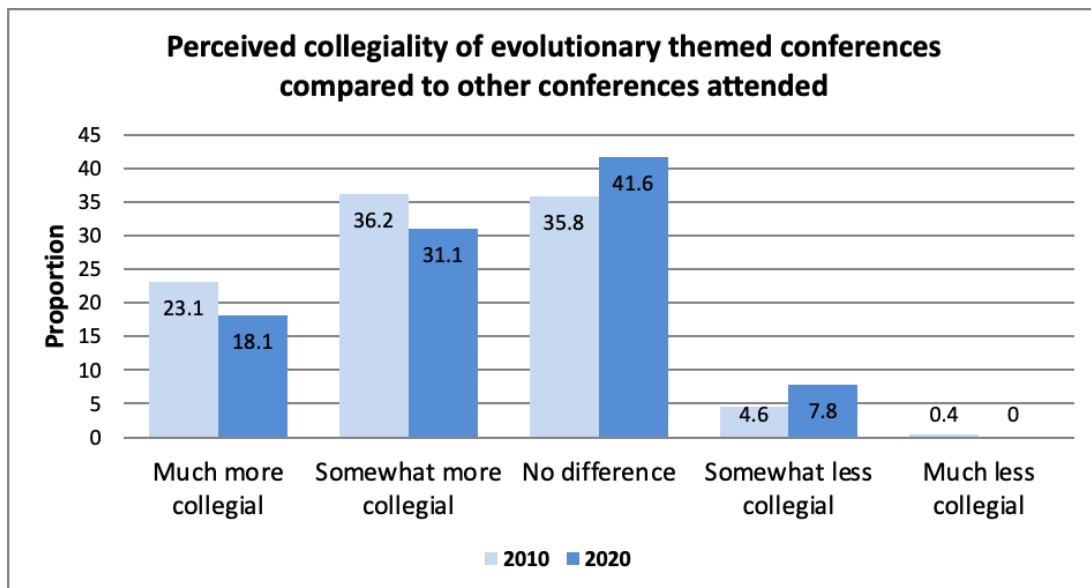


Figure 13. How collegial are evolutionary themed conferences compared to other conferences that you attend?

Note. Response options were 5 = Much more collegial, 4 = Somewhat more collegial, 3 = No difference, 2 = Somewhat less collegial, 1 = Much less collegial.

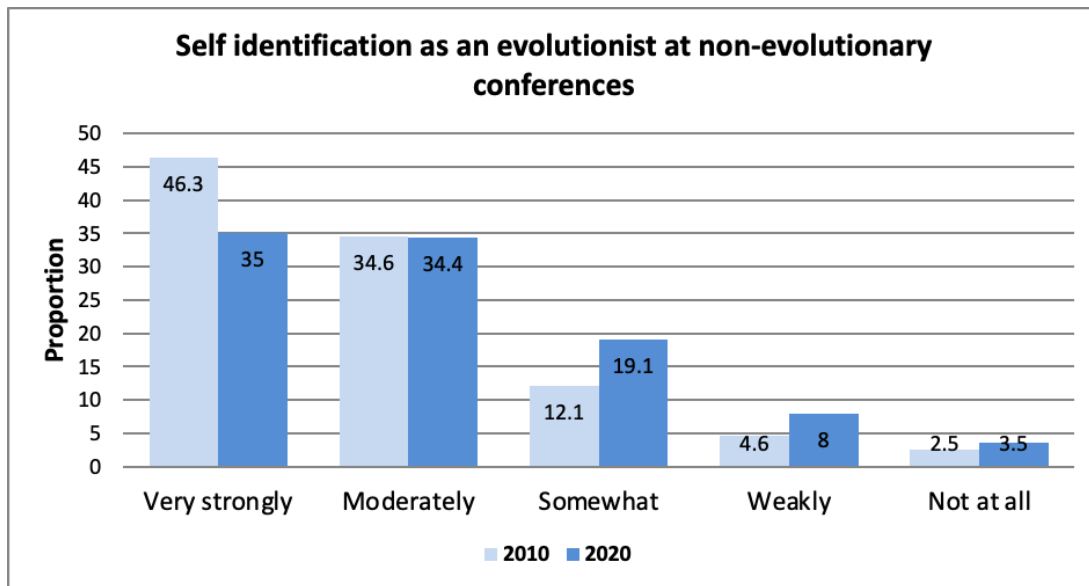


Figure 14. When you are at non-evolutionary themed conferences, how strongly do you identify yourself as an evolutionist?

Note: Response options were 5 = Very strongly, 4 = Moderately, 3 = Somewhat, 2 = Weakly, 1 = Not at all.

Table 11. Evolutionary themed conferences attended

Conference	<i>n</i>	%
Human Behavior and Evolution Society (HBES)	462	79.8
International Society for Human Ethology (ISHE)	172	29.7
European Human Behavior and Evolution Association (EHBEA)	152	26.3
NorthEastern Evolutionary Psychology Society (NEEPS)	134	23.1
Animal Behavior Society (ABS)	106	18.3
California Workshop on Evolutionary Social Science (CWESS)	51	8.8
Polish Society for Human and Evolution Studies (PTNCE)	30	5.2
Association for Politics and the Life Sciences (APLS)	13	2.2
Other(s)	191	33.0
None	27	4.7

4.0: Collaboration and Productivity

Current respondents had somewhat more external faculty collaborators than 2010 respondents. There were no significant differences in the number of internal faculty collaborators, graduate student collaborators, or undergraduate student collaborators. Respondents estimated the proportion of their evolutionary research that was conducted collaboratively on a 0-100% scale; the average estimate was 62%, ($M = 61.79$, $SD = 34.14$) and 22% of respondents conducted 100% of their evolutionary research collaboratively (25%, 50%, and 75% quartiles: 30%, 70%, 90%). Participants on average had 13 faculty collaborators ($M = 12.65$, $SD = 20.40$) in evolutionary research projects (25%, 50%, and 75% quartiles: 3, 7, 14 collaborators). On average, respondents had two collaborators in their department ($M = 2.14$, $SD = 5.20$; 25%, 50%, and 75% quartiles: 0, 1, 3), one in other departments in their institution ($M = 1.16$, $SD = 2.42$; 25%, 50%, and 75% quartiles: 0, 0, 1), and nine external faculty ($M = 9.36$, $SD = 18.56$; 25%, 50%, and 75% quartiles: 2, 4, 10). Respondents worked with a mean of six graduate students ($M = 5.75$, $SD = 8.52$; 25%, 50%, and 75% quartiles: 1, 3, 7) and 13 undergraduate students on evolutionary research projects ($M = 12.74$, $SD = 34.14$; 25%, 50%, and 75% quartiles: 1, 3, 10). Current respondents were less likely to first hear about evolutionary research on human psychology and/or behavior from a colleague than 2010 respondents, and there were no differences in the likelihood of being informed by other types of sources.

Table 12. Collaborators by type

Item	2010	2020	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
Internal faculty	2.82	3.27	1.09	780	.276	0.08
External faculty	6.33	9.36	2.28	800	.023	0.17
Graduate student	4.59	5.75	1.91	784	.056	0.14
Undergraduate student	12.24	12.74	0.21	762	.834	0.02

Note. *t* = Student's test statistic, *df* = degrees of freedom, *p* = probability level, *d* = Cohen's effect size; .2 = small, .5 = medium, .8 = large.

Table 13. How did you first hear about evolutionary research on human psychology and/or behavior?

How did you first hear about evolutionary research on human psychology and/or behavior?					
Response	2010 (<i>N</i> = 297)		2020 (<i>N</i> = 579)		<i>p</i>
	<i>n</i>	%	<i>n</i>	%	
Undergraduate course	131	44.1	268	46.3	.570
Book or article not read for a course	81	27.3	130	22.5	.108
Graduate course	34	11.4	76	13.1	.489
Conference	7	2.4	21	3.6	.316
Colleague	22	7.4	19	3.3	.006
Colloquium or guest lecture	1	0.3	9	1.6	.109
Introductory textbook	0	0.0	7	1.2	.058
Website	0	0.0	4	0.7	.152
News article	3	1.0	3	0.5	.401
Documentary	4	1.3	0	0.0	.005
Accidentally while searching for	2	0.7	0	0.0	.048
Other	10	3.4	41	7.1	.027
Unknown	2	0.7	1	0.2	.630

Note. *p*-values indicate results for Chi-Square tests.

On average, 65% of respondents' research was designed to test evolutionary hypotheses ($SD = 28.76$; 25%, 50%, and 75% quartiles: 50%, 70%, 90%). Respondents had an average of 44 papers ($M = 43.68$, $SD = 56.93$) that were published or in press at peer-reviewed journals, and 96% of respondents had at least one publication (25%, 50%, and 75% quartiles: 9, 21, 60). About two-thirds (64.88%; $SD = 29.24$) of these papers were based on evolutionary hypotheses and 18% of respondents based *all* of their papers on evolutionary hypotheses (25%, 50%, and 75% quartiles: 50%, 70%, 90%). Respondents had an average of 26 papers ($M = 26.16$, $SD = 37.70$) based on evolutionary hypotheses that were published or in press at peer-reviewed journals, 90% of respondents had at least one publication based on evolutionary hypotheses (25%, 50%, and 75% quartiles: 5, 12, 33).

Respondents had an average of 29 presentations ($M = 45.66$, $SD = 57.23$) at academic or professional conferences, and 99% of respondents had at least one presentation (25%, 50%, and 75% quartiles: 12, 28, 50). On average, 68% of these presentations were based on evolutionary hypotheses ($SD = 30.53$), whereas 28% of respondents based *all* of their papers on evolutionary hypotheses (25%, 50%, and 75% quartiles: 50%, 80%, 90%). Respondents had an average of 28 presentations ($M = 28.43$, $SD = 36.46$) based on evolutionary hypotheses at academic or professional conferences, and 94% of respondents had at least one presentation based on evolutionary hypotheses (25%, 50%, and 75% quartiles: 6, 16, 36). Among faculty ($n = 445$, including retired and emeritus), 59.1% had received external funding

to support their evolutionary research and 64.3% had received internal funding to support their evolutionary research.

5.0: Open-Ended Comments on Career and Field Issues

Respondents elaborated on career and field issues in open-ended comments. There were many common themes, as well as differences in perspectives and experiences. Many respondents contrasted the benefits which an evolutionary perspective brought to their research with the challenges with which evolutionary research is received. Benefits included the power of the evolutionary framework for deriving hypotheses and advancing knowledge, theoretical integration across life sciences, and valued collaborators on research projects. Challenges included the continuing hostility of peers in one's department and general field of work, lack of evolution-specific job opportunities, and lack of dedicated research funding for evolutionary research. A few respondents thought that having an evolutionary perspective had advanced their careers compared to a mainstream perspective, others felt that having an evolutionary perspective had hindered their careers, and many expressed a mix of hindrance and help.

There was a common theme that the academic job market was currently very difficult and would become even more difficult in the future, regardless of one's theoretical perspective. There are decreases in tenure line positions across disciplines, though perhaps less so in science, technology, engineering, and mathematics (STEM) fields and even more so in the humanities. There are oversupplies of PhD graduates, especially in Psychology. There was some variation in perspective for the influence of identifying as an evolutionist on outcomes in the job market or one's career progress. A few respondents did not experience any problematic issues, noting the successful placement of one's doctoral students into tenure track positions at prestigious universities or being welcomed into a department with other evolutionary scholars. Others reported open or covert hostility from other faculty, such as interfering with graduate student recruitment or encouraging students to provoke unproductive classroom debates (based on mischaracterizations). One person managed to keep a position due to extremely high productivity and earned prestige, despite the rest of the department devolving into identity politics. Many noted that there were few jobs that were specifically recruiting an evolutionary scholar, and thus some recommended marketing oneself using a mainstream subdiscipline (i.e., developmental, health, personality, social, etc.). Respondents varied in the degree to which they recommended emphasizing an evolutionary perspective. For some, it would be obvious from their vita, while others would minimize evolution in job applications and frame research using mainstream terminology (e.g., biopsychosocial, etc.). Some respondents created two versions of application materials, one including or emphasizing an evolutionary approach and the other minimizing or omitting it, depending on the specific job application.

Several respondents noted that academia had shifted further to the left politically over the past decade, especially in recent years in the USA. This cultural shift was seen as increasing hostility to evolutionary models, both because of genuine implications (e.g., humans are not interchangeable blank slates) and continuing misperceptions (i.e., evolutionary models are inherently racist, sexist, transphobic,

etc.). There was an increasing academic focus on contemporary social issues (e.g., race, sexuality, etc.) and less attention to theoretical perspectives or basic research. Respondents saw the increasing influence of political ideologies, aligned with epistemological stances (e.g., post-modernism, post-structuralism, and social constructionism), as anti-science and hostile to academic ideals (e.g., free exchange of ideas, critical thinking skills) in general. These respondents saw the future of evolutionary research as bleak, at least in Western nations.

Other respondents expressed the need for evolutionary researchers to reach out more to hostile colleagues and improve communication skills. Some advised against separating scholars into evolutionists and non-evolutionists and assuming hostility from those who did not follow an evolutionary approach. Several respondents noted that there were a few “bad apples” in the field, whose research and writings may not be representative of the field but provoked continued hostility toward the field because of the controversial nature of statements. One graduate student became increasingly more cautious about identifying as an evolutionary scholar because of such embarrassments. A few respondents echoed the notion that there is a difference between evolutionary theory in general and the framework which those identifying as Evolutionary Psychologists utilized, e.g., “to my mind there is a difference between having an academic interest in human evolution and being an Evolutionary Psychologist.”

DISCUSSION

Overall, it is evident that evolutionary scholars would benefit from a greater focus on activities which would advance evolutionary perspectives. Although most respondents perceived gradual progress in the prominence of evolutionary perspectives in the past decade, there was little difference in objective metrics or perceptions of interest and support. Compared to the survey a decade ago, most respondents reported a sense that future progress was threatened by overall political trends in academia. The optimism expressed in the prior study did not appear to be fulfilled, as the field appears to have unexpectedly plateaued. There is a mix of promising and concerning trends, including the sample composition itself as an indicator of growth in the field. On one hand, the sample was larger and more globally representative than a decade ago. On the other hand, respondents were generally more advanced in their careers, with a smaller proportion of students represented. In both samples, about three-quarters of respondents are in doctoral level universities, with just over half of respondents trained in Psychology and about a fifth trained in Anthropology. More respondents thought that evolutionary perspectives would become more prominent than less prominent in the next decade, though about 9% of respondents thought they would become less prominent, compared to less than 1% a decade ago.

Being the only evolutionary scholar in one's department, even in a research university, was a common theme. There was a somewhat normal distribution of department faculty interest in evolutionary perspectives, with the plurality being indifferent to evolutionary perspectives. There were more department faculty on the sympathetic/interested end of the distribution than the hostile end, with a slight

increase in the proportion of faculty who are active evolutionary researchers and sympathetic to evolutionary perspectives compared to 2010. There were more graduate evolutionary courses available in one's department (doubling from one to two) compared to 2010, and about two undergraduate courses available in both waves. Once again, interest in evolutionary perspectives was highest among students (both graduate and undergraduate) and the general public, with less interest among department faculty and funding agencies. Current respondents had somewhat more external faculty collaborators than 2010 respondents. There were no significant differences in the number of internal faculty collaborators, graduate student collaborators, or undergraduate student collaborators.

About a third of respondents strongly identified as an evolutionist when applying for their current position, though about one quarter would strongly identify as an evolutionist when applying for a position not specifically advertised for an evolutionist. Current respondents were somewhat less likely to self-identify as an evolutionist at non-evolutionary conferences compared to 2010 respondents. Perceived collegiality of evolutionary themed conferences was still higher compared to other conferences attended, but the difference was somewhat smaller in 2020. There appeared to be a greater divergence of perspectives on the social dynamics of evolutionary conferences than in the previous survey. For example, both perceptions of threat from patriarchal culture and from political correctness were found, suggesting that the cultural conflicts between disciplinary perspectives were now evident within the field. However, such highly divergent perspectives were in the minority, reflecting the tails of the distribution of respondents rather than characterizing most researchers in the field. Future survey waves will assess whether the ominous predictions based on current political dynamics are confirmed or refuted.

In addition to external factors constraining the prevalence and acceptance of the evolutionary approach to human research, it is possible that some changes may have occurred within the field as it matured. The initial wave of modern evolutionary scholarship on human psychology and behavior was launched by a small group of academics who saw themselves as challenging the dominant views of their fields. In our experience, these scholars appear to be allies who consistently supported each other's efforts, despite any differences in research interests or theoretical perspectives. As the field grew, this initial solidarity may have transitioned into the typical dynamics of academia, where scholars see themselves as competing for prominence with their peers. Although theoretical disagreements are an important aspect of the advancement of science, the Balkanization of research groups and approaches may also be detrimental to the cohesiveness of the field and responses to criticisms. This possibility will be assessed in future waves of this project.

Relatedly, as the field has matured, new areas of research have arisen. Similar to an institution increasing its number of departments to meet student needs, faculty interest, and changes in academia, evolutionary psychology as a field has become increasingly diversified. The result of a university developing new departments is increased academic silos (Friedman & Friedman, 2018), and perhaps evolutionary psychology is undergoing a similar transformation. Consequently, there may be increased feelings about a lack of community at conferences, or general cohesiveness as a field. One way to examine this possibility would be to perform a study like Webster et al. (2009) who examined hot topics and popular papers in the

journal *Evolution and Human Behavior*. Future work could examine whether the numbers of popular topics have increased over time, for example.

Limitations

There are a few limitations that should be addressed. The first concerns the sample itself. Although we tried to obtain a large sample with a broad range of respondents, there is always the possibility of selection bias in the self-selection process of opting in to participate. There were more full professors than individuals from the other groups and it may be that those with stronger feelings, perhaps more grievances, chose to participate, limiting the generalizability of the results. Because sampling was not probabilistic, participants may represent those most motivated to respond, whether due to interests or grievances regarding the topic.

In addition, there were some demographic differences between our 2010 sample and 2020 that could also have shifted the picture presented. In 2010, there were substantially more graduate student respondents (30.4% vs 12.7% of the sample) and there were greater numbers of associate and full professors in the 2020 sample. Graduate students and full professors may have somewhat different perspectives on some of the questions asked that could have skewed the 2020 results toward the full professor view.

CONCLUSIONS

Given that evolutionary theory is the unifying theory of the life sciences and the most powerful framework for understanding human psychology and behavior, it is disappointing to see results reflecting a lack of progress in evolutionary approaches to human psychology and behavior in academia. It may be necessary for evolutionary societies and scholars to take a more active role in promoting evolutionary perspectives both within academia and in public discourse. Changing political dynamics may require greater efforts to dispel misconceptions about evolutionary theory and its application to humans. Solutions for humanity's current challenges will be more effective if they are informed by an accurate understanding of humanity, which of course would have evolutionary theory as the foundation. Future assessments will reveal whether evolutionary-informed research on humans is marginalized in academia or experiences a resurgence.

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