Statistical associations between antisemitism and higher education: a cross-sectional study of UK-resident adults

Daniel Allington and David Hirsh

Accepted for publication, 12-09-2023

Preferred citation: Allington, Daniel and Hirsh, David, 'Statistical associations between antisemitism and higher education: a cross-sectional study of UK-resident adults', *Journal of Contemporary Antisemitism*, 6.2 (2023).

Abstract

Scholars have drawn attention to the prevalence of antizionist campaigning on campus, but previous studies have found lower levels of antisemitism among graduates. In this cross-sectional study, levels of antisemitism were measured among members of a large, demographically-representative sample of UK residents (N = 1725), using the Generalised Antisemitism (GeAs) scale. Overall scores, as well as scores for the two subscales of this scale (i.e. Judeophobic Antisemitism, JpAs, and Antizionist Antisemitism, AzAs) were measured, with comparisons being made according to educational level (degree-educated vs non-degree educated) and subject area (among degree holders only, classified using the JACS 3.0 principal subject area codes). Degree holders were found to have significantly lower scores than non-degree holders for Generalised Antisemitism and Judeophobic Antisemitism, while scores for Antizionist Antisemitism were effectively identical. Among degree holders, graduates from subjects under the JACS 3.0 umbrella category of Historical and Philosophical Studies exhibited significantly lower scores for Generalised Antisemitism and Judeophobic Antisemitism, and lower scores for Antizionist Antisemitism, although the latter association fell short of significance following application of the Holm-Bonferroni correction for multiple comparisons (unsurprisingly, given the large number of hypotheses and the small absolute number of respondents in this category, N = 65). Exploratory analysis of the dataset suggests possible further negative associations with antisemitism for graduates of Economics, Psychology, and Counselling, which may have been concealed by the system of categories employed. These associations may have intuitive theoretical explanations. However, further research will be necessary to test whether they are statistically robust. The article concludes with a discussion

of possible theoretical explanations for observed patterns, and some suggestions for further research.

1 Introduction

The link between antizionism and older forms of antisemitism is well established, on a theoretical, historical, and statistical level.[1] Antizionist campaigning has been underway on British university campuses since the late 1970s,[2] so one might expect to see higher levels of endorsement for antizionist expressions of antisemitism, and perhaps also for other forms of antisemitism, among British university graduates. However, two peer-reviewed studies carried out in the UK have recently found *lower* levels of antisemitism among graduates than among non-graduates, with these negative associations being robust to a range of demographic and other controls.[3] A limitation of the studies in question has been their inability to distinguish between graduates according to area of

[1] Pierre-André Taguieff, *Rising from the Muck: The New Anti-Semitism in Europe* (Chicago: Ivan R. Dee, 2004); Robert Wistrich, *The Politics of Ressentiment: Israel, Jews, and the German Media* (Jerusalem: Vidal Sassoon International Center for the Study of Antisemitism, 2004); W. Frindte, S. Wettig, and D. Wammetsberger, 'Old and New Anti-Semitic Attitudes in the Context of Authoritarianism and Social Dominance Orientation: Two Studies in Germany', *Peace Conflict: Journal of Peace Psychology*, 11.3 (2005), 239–66 <https://doi.org/10.1207/s15327949pac1103_3>; E. H. Kaplan and C. A. Small, 'Anti-Israel Sentiment Predicts Anti-Semitism in Europe', *Journal of Conflict Resolution*, 50.548 (2006) <https://doi.org/https://www.jstor.org/stable/27638506>; Walter Laqueur, *The Changing Face of Anti-Semitism: From Ancient Times to the Present Day* (Oxford: Oxford University Press, 2006); David Hirsh, *Anti-Zionism and Antisemitism: Cosmopolitan Reflections* (New Haven: Yale Initiative for the Interdisciplinary Study of Antisemitism, 2007); Dave Rich, *The Left's Jewish Problem: Jeremy Corbyn, Israel, and Anti-Semitism* (London: Biteback Publishing, 2016); David Hirsh, *Contemporary Left Antisemitism* (Abingdon: Routledge, 2017); Robert Fine and Philip Spencer, *Antisemitism and the Left: On the Return of the Jewish Question* (Manchester: Manchester University Press, 2017); L. Daniel Staetsky, *Antisemitism in Contemporary Great Britain: A Study of Attitudes Towards Jews and Israel* (London: Institute for Jewish Policy Research, 2017); David M. Seymour, 'Antisemitism and Antizionism: Ideologies of the Jewish Question', *Journal of Contemporary Antisemitism*, 2.2 (2019); L. Daniel Staetsky, 'The Left, the Right, Christians, Muslims, and Detractors of Israel: Who Is Antisemitic in Great Britain in the Early 21st Century?', *Contemporary Jewry*, 40 (2020), 259–92 <https://doi.org/10.1007/s12397-020-09335-1>; Daniel Allington, David Hirsh, and Louise Katz, 'The Generalised Antisemitism (GeAs) Scale: Validity and Factor Structure', *Journal of Contemporary Antisemitism*, 5.2 (2022), 1–28 <https://doi.org/10.26613/jca/5.2.113>; David Hirsh and Hilary Miller, 'Durban Antizionism: Its Sources, Its Impact, and Its Relation to Older Anti-Jewish Ideologies', *Journal of Contemporary Antisemitism*, 5.1 (2022), 21–36 <https://doi.org/10.26613/jca/5.1.98>.

[2] Rich, pp. 119–57; for details of the situation in the US, see Deborah Lipstadt, *Antisemitism: Then and Now* (London / Victoria: Scribe, 2019); and Cary Nelson, *Israel Denial: Anti-Zionism, Anti-Semitism, and the Faculty Campaign Against the Jewish State* (Washington, DC / Bloomington, IN: Academic Engagement Network / Indiana University Press, 2019).

[3] Daniel Allington, David Hirsh, and Louise Katz, 'Antisemitism Is Predicted by Anti-Hierarchical Aggression, Totalitarianism, and Belief in Malevolent Global Conspiracies', *Humanities and Social Sciences Communications*, 10.155 (2023) <https://doi.org/10.1057/s41599-023-01624-y>; Daniel Allington, David Hirsh, and Louise Katz, 'The Relationship Between Antisemitic Attitudes and Conspiracy Beliefs: A Cross-Sectional Study of UK-Resident Adults', *Contemporary Jewry*, 2023 [in press].

study. The purpose of the current study is firstly to re-test the hypothesis of a difference in mean levels of antisemitism dependent on education to degree level, and then, for each subject area, to test the hypothesis that the mean level of antisemitism for graduates of that subject area is different than the mean for all other graduates.

This is in many ways a preliminary study. Because nothing like it had been attempted previously, there were few prior studies on which to build. Having reported in detail on the collection and analysis of the data discussed here, the article concludes with a discussion of possible explanations for its findings, which may inform the formulation of hypotheses for testing in future studies, as well as with extensive suggestions with regard to ways in which the current study's findings might be more efficiently replicated, and ways in which the limitations of the study could be transcended in future studies.

Much of this article is of a highly technical nature, which was necessary in order to support future studies as fully as possible, for example with discussions of effect sizes and statistical power that may inform the planning stage of such studies. As much of this material is likely to be of limited interest to the general reader, it is anticipated that many readers will wish to bypass it, and to skip straight to the Discussion section, and to the Limitations and Scope for Future Work section which follows it.

2 Methodology

Data were collected by YouGov as part of the company's regular political omnibus poll from 22 to 23 December 2022, using a demographically-representative sample of the UK adult population ($N = 1725$). Antisemitism was measured using the Generalised Antisemitism (GeAs) scale, a validated instrument which recognises and distinguishes Judeophobic Antisemitism (JpAs) and Antizionist Antisemitism (AzAs).[4] Educational level is one of YouGov's standard demographic variables, and, for the purposes of this study, degree-educated respondents were additionally asked to describe the subject area of their highest qualification using free text. The sample contained 590 respondents educated to degree level, of whom 589 chose to answer this open question.

Degree subject areas were categorised using the official typology employed in UK higher education, i.e. the JACS 3.0 Principal Subject Area Codes (see Table 1). A small minority of degree-educated respondents described their degree-level qualifications in a way which was not categorisable under this system, for example due to misinterpretation of the question ($N = 13$). For analytic purposes, these respondents were treated as graduates but were not included in any specific

[4] Daniel Allington, David Hirsh, and Louise Katz, 'The Generalised Antisemitism (GeAs) Scale: A Questionnaire Instrument for Measuring Antisemitism as Expressed in Relation Both to Jews and to Israel', *Journal of Contemporary Antisemitism*, 5.1 (2022), 37–48 <https://doi.org/10.26613/jca/5.1.99>; Allington, Hirsh, and Katz, 'The Generalised Antisemitism (GeAs) Scale'.

Table 1: JACS 3.0 Principal Subject Codes

Code	Subjects
1	Medicine and Dentistry
2	Subjects Allied to Medicine
3	Biological Sciences
4	Veterinary Science
5	Agriculture and Related Subjects
6	Physical Sciences
7	Mathematical Sciences
8	Computer Science
9	Engineering and Technology
A	Architecture, Building and Planning
B	Social Studies
C	Law
D	Business and Administrative Studies
E	Mass Communications and Documentation
F	Languages
G	Historical and Philosophical Studies
H	Creative Arts and Design
I	Education

group of graduates. Subject areas with fewer than 10 respondents in the sample were excluded from analysis.

Under the JACS 3.0 typology, all forms of Psychology fall into Subject Area 3, i.e. Biological Sciences, while Economics falls into Subject Area B, i.e. Social Studies, and Counselling falls into Subject Area 2, i.e. Subjects Allied to Medicine. This might be viewed as counter-intuitive, given that, in British universities, Counselling is often taught in the same administrative unit as Psychology, which is often the Faculty of Social Sciences or its nearest equivalent, while Economics is often taught in the Business School or its nearest equivalent. For this reason, an additional analysis of Subject Areas 2, 3, B, and D is presented after the main analysis, following reclassification of Psychology and Counselling into Subject Area B (but not Psychiatry, which remained in Subject Area 2), and of Economics into Subject area D (Business and Administrative Studies).

It was not possible to compare mean levels of antisemitism among graduates of different subject areas directly, for example by using a test such as ANOVA or ANCOVA, because many respondents identified themselves as graduates of multiple subject areas ('joint honours' degrees are common in the UK). Mean levels of antisemitism among graduates and non-graduates were compared using the independent samples t-test with Welch's correction for unequal variances. Mean levels of antisemitism for respondents identified as having graduated

from specific subject areas were compared to mean levels of antisemitism for respondents not identified as having graduated from those subject areas using the same test. These tests were carried out first for Generalised Antisemitism and then repeated for Judeophobic Antisemitism and Antizionist Antisemitism. The use of the t-test prevented the use of demographic controls, but it was anticipated that numbers of respondents for many subject areas would be small, raising problems of potential over-fitting and low statistical power in the event that an analytic method such as multiple linear modelling were to be applied.

Raw p-values are reported in tables, followed by application of the Holm-Bonferroni method in text to assist in interpretation of those p-values. It should be borne in mind that any method of correction for multiple comparisons will reduce effective statistical power, although this problem will be less severe with the Holm-Bonferroni method than with methods more prone to inflation of Type II errors, such as the Bonferroni correction.

Effect sizes — which will be particularly important for the design of any replication or follow-up studies — are reported in terms of the d statistic — that is, mean difference between two groups, divided by standard deviation across the two groups combined — with 95% confidence intervals.

3 Power analysis

With such a large sample, even a mean difference at the lower bound for a 'small' effect,[5] would be detectable with a statistical power of .98 at $p < .050$: that is, given such a small mean difference between degree-educated and non-degree educated members of the general population, there would be only a 2% chance of selecting random samples of degree-holders and non-degree holders this large the mean difference between which was not great enough to be significant at $p < .050$. The study thus had more than adequate power to test for differences between those whose highest qualifications are at degree level and those whose highest qualifications are below degree level.

When it comes to individual subject areas, however, the sample sizes are much smaller. Table 2 presents the statistical power for t-tests at the three canonical cut-off points of $p < .050, p < .010$, and $p < .001$ for real effect sizes of 0.2, 0.5, and 0.8 (i.e. the lower bounds for small, medium, and large effect sizes, respectively),[6] given subject areas for which the sample size is 11, 36, 50, and 80 (these being, respectively, the smallest that could be included given the removal of groups with fewer than 10 observations, the median of all groups regardless of whether or not they could be included, the median all those that could be included, and the largest that was observed).

It may be seen that, at $p < .050$, statistical power exceeded .80 for medium-

[5] I.e. d = 0.20, Jacob Cohen, *Statistical Power Analysis for the Behavioural Sciences*, *Psychology Press* (Lawrence Erlbaum Associates, 1988), p. 25.

[6] Cohen, pp. 25–26.

Table 2: Statistical power at given group and effect sizes, and at canonical cut-offs for the significance of an association

	d		
N	0.20	0.50	0.80
p < .050			
11	.09	.32	.66
36	.21	.81	1.00
50	.27	.91	1.00
80	.38	.98	1.00
p < .010			
11	.02	.12	.36
36	.07	.58	.97
50	.10	.76	1.00
80	.17	.94	1.00
p < .001			
11	.00	.02	.10
36	.01	.28	.85
50	.02	.47	.97
80	.05	.78	1.00

and large-sized effects potentially associated with subject areas with at least the median number of observations, but not for effects at the lower bound of reportability for any actually-collected subject area. This means that very small but still real effects would be unlikely to be found to be statistically significant, given these group sizes, and that even differences at the threshold for a large effect could have a high chance of being found to be statistically insignificant in included subject areas with the lowest numbers of observations (i.e. N = 11), having only a 66% chance of being great enough for the null hypothesis to be rejected. This problem is exacerbated by the problem of multiple comparisons, because, given 45 hypotheses (15 subject areas for which a hypothesis test was possible and three measures of antisemitism on which to test for differences), one would expect around two group differences significant to $p < .050$ even in the absence of a single 'real' effect. Correction for this problem via the Holm-Bonferroni method will require that the lowest p-value be close to .001 (or even lower) in order to constrain the probability of a single false positive to be less than 5%. As is clear from Table 2, the study would be under-powered for detection of an effect at the lower threshold of medium size for all observed group sizes given such a stringent cut-off, and will thus require a 'real' effect of a size somewhat above that threshold in order to have a good chance of finding an association to be statistically significant if corrections for multiple comparisons are applied.

Table 3: Generalised Antisemitism among graduates, by JACS 3.0 subject area

				d			
Subject Area	N	DF	t	Est.	Low	High	p
1	11	10.28	0.641	0.23	-0.56	1.02	.536
2	51	62.93	0.412	0.05	-0.21	0.32	.682
3	53	67.58	-1.773	-0.22	-0.47	0.03	.081
4	0						
5	6						
6	30	31.96	-0.701	-0.14	-0.53	0.26	.488
7	24	24.51	-0.115	-0.03	-0.51	0.46	.909
8	39	41.81	0.757	0.15	-0.25	0.54	.454
9	33	35.31	2.748	0.53	0.14	0.91	.009
A	8						
B	80	101.58	-0.852	-0.11	-0.36	0.14	.396
C	21	21.12	0.325	0.08	-0.45	0.61	.748
D	76	98.09	1.149	0.14	-0.10	0.39	.254
E	20	20.81	-0.722	-0.14	-0.56	0.27	.478
F	64	87.94	-1.318	-0.15	-0.37	0.08	.191
G	65	90.17	-4.523	-0.50	-0.72	-0.28	<.001
H	53	65.05	-0.540	-0.07	-0.34	0.19	.591
I	49	57.21	-0.251	-0.04	-0.33	0.26	.803

95% confidence intervals

These limitations must be borne in mind when interpreting the findings reported below. However, given that the researchers could have known neither the likely effect sizes nor even the sizes of the groups in advance, issues with statistical power were probably unavoidable. Reference to the detailed findings of this study will put future researchers in a better position, and a number of ways in which to increase the statistical power of future studies are discussed at the end of this article.

4 Findings: main analysis

When compared to respondents educated to below degree level, respondents educated to degree level had significantly lower mean scores for Generalised Antisemitism, $t(1183.20)$ = -5.228, p <.001, d = -0.26 95% CI [-0.36, -0.16] and Judeophobic Antisemitism, $t(1213.15)$ = -8.643, p <.001, d = -0.43 95% CI [-0.52, -0.33], but effectively identical mean scores for Antizionist Antisemitism, $t(1086.29)$ = 0.310, p = .757, d = 0.02 95% CI [-0.09, 0.12]. This suggests a small effect size for Generalised Antisemitism and a stronger, although still small, effect size for Judeophobic Antisemitism, and no effect at all for Antizionist Antisemitism.

Table 4: Judeophobic Antisemitism among graduates, by JACS 3.0 subject area

				d			
Subject Area	N	DF	t	Est.	Low	High	p
1	11	10.44	0.712	0.20	-0.43	0.83	.492
2	51	60.52	0.104	0.01	-0.27	0.30	.918
3	53	67.54	-2.742	-0.34	-0.59	-0.09	.008
4	0						
5	6						
6	30	32.63	0.788	0.14	-0.22	0.50	.436
7	24	24.67	1.191	0.27	-0.20	0.73	.245
8	39	41.54	1.338	0.27	-0.14	0.67	.188
9	33	34.98	2.467	0.49	0.09	0.90	.019
A	8						
B	80	111.77	-1.886	-0.21	-0.43	0.01	.062
C	21	21.51	0.581	0.13	-0.33	0.59	.567
D	76	107.56	1.866	0.20	-0.01	0.42	.065
E	20	20.56	-0.985	-0.21	-0.65	0.23	.336
F	64	90.42	-2.293	-0.25	-0.47	-0.03	.024
G	65	90.52	-4.122	-0.45	-0.67	-0.23	<.001
H	53	63.36	-0.862	-0.12	-0.40	0.16	.392
I	49	55.14	0.381	0.06	-0.27	0.39	.704

95% confidence intervals

Table 5: Antizionist Antisemitism among graduates, by JACS 3.0 subject area

				d			
Subject Area	N	DF	t	Est.	Low	High	p
1	11	10.29	0.475	0.17	-0.61	0.94	.645
2	51	62.74	0.550	0.07	-0.19	0.34	.584
3	53	63.25	-0.108	-0.02	-0.30	0.27	.915
4	0						
5	6						
6	30	32.28	-1.948	-0.36	-0.74	0.02	.060
7	24	24.99	-1.502	-0.31	-0.74	0.12	.146
8	39	42.63	-0.172	-0.03	-0.39	0.33	.864
9	33	37.35	2.268	0.35	0.04	0.67	.029
A	8						
B	80	97.80	0.265	0.04	-0.23	0.30	.791
C	21	21.06	0.018	0.00	-0.54	0.55	.986
D	76	94.26	0.187	0.02	-0.24	0.29	.852
E	20	21.19	-0.120	-0.02	-0.40	0.36	.905
F	64	82.92	0.080	0.01	-0.23	0.25	.937
G	65	78.97	-2.582	-0.35	-0.62	-0.08	.012
H	53	64.69	0.039	0.01	-0.26	0.27	.969
I	49	59.92	-0.920	-0.12	-0.39	0.14	.361

95% confidence intervals

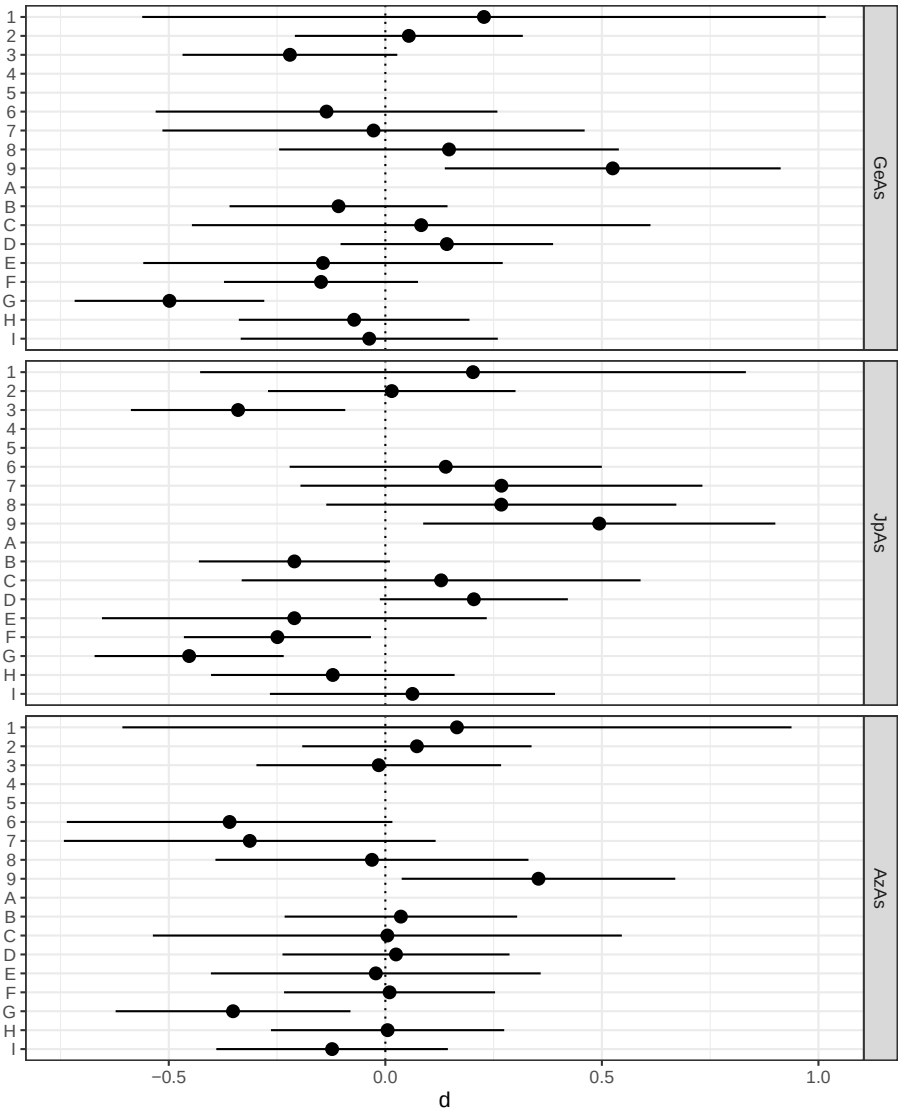

Figure 1: Generalised, Judeophobic, and Antizionist Antisemitism among graduates, by JACS 3.0 subject area (95% confidence intervals)

See Tables 3, 4, and 5 and Figure 1 for comparison of respondents with degrees in each subject area with respondents with degrees in all other subject areas with regard to Generalised Antisemitism, Judeophobic Antisemitism, and Antizionist Antisemitism (respectively), with 95% confidence intervals. In the great majority of cases, there were no statistically significant differences. The only exceptions were subject areas 3 (biological sciences), 9 (engineering and technology), F (languages), and G (historical and philosophical studies). However, limitations with regard to statistical power mean that small effects, and effects associated with subject areas represented by few respondents, were unlikely to be detected (see section 3).

There was significantly elevated Generalised Antisemitism in subject area 9 and significantly diminished Generalised Antisemitism in subject area G, with both of these being medium-sized effects. There was also significantly elevated Judeophobic Antisemitism in subject area 9 — this being on the cusp of a medium-sized effect — and diminished Judeophobic Antisemitism in subject areas 3, F, and G — these being small effects, although verging on medium size in the latter case. And lastly, there was significantly elevated Antizionist Antisemitism in subject area 9 and diminished Antizionist Antisemitism in subject area G — these being small effects.

With regard to Judeophobic Antisemitism, elevated levels were also observed in subject area D (business and administrative studies), and diminished levels were also observed in subject area B (social studies), although these effects were small, and fell just short of statistical significance. With regard to Antizionist Antisemitism, diminished levels were also observed in subject area 6 (physical sciences), although this effect too was small, and fell just short of statistical significance.

Following application of the Holm-Bonferroni correction with the assumption of a family of hypotheses consisting of one hypothesis test per form of antisemitism per JACS 3.0 subject area that was possible to include in the analysis and with a cut-off of $p < .050$, the only significant associations were found between Subject Area G and GeAs and between Subject Area G and JpAs. This does not mean that other apparent associations are not 'real', but that, given the sizes of the groups involved and the number of hypotheses being tested, the differences measured were insufficiently pronounced to enable us to rule out the possibility that they had arisen through sampling error.

5 Findings following corrective reclassification of Psychology, Counselling, and Economics

As noted above, the JACS 3.0 subject area classifications are not entirely intuitive. Table 6 re-presents the findings with regard to all three forms of antisemitism for Subject Areas 2, 3, B, and D after reclassifying Economics under subject area D (formerly Subject Area B) and Psychology and Counselling under subject area

Table 6: All forms of antisemitism by higher educational subject area, following recoding of Psychology, Counselling, and Economics students

				d			
Subject Area	N	DF	t	Est.	Low	High	p
GeAs							
2	48	58.17	0.527	0.07	-0.20	0.34	.600
3	28	30.66	-0.467	-0.08	-0.43	0.27	.644
B	91	124.50	-0.775	-0.09	-0.32	0.14	.440
D	91	123.27	0.172	0.02	-0.21	0.25	.864
JpAs							
2	48	56.28	0.505	0.07	-0.22	0.37	.615
3	28	30.89	-1.115	-0.19	-0.52	0.15	.273
B	91	132.95	-2.377	-0.25	-0.46	-0.04	.019
D	91	136.70	0.667	0.07	-0.14	0.27	.506
AzAs							
2	48	58.35	0.308	0.04	-0.23	0.31	.759
3	28	29.31	0.272	0.06	-0.37	0.48	.787
B	91	116.43	0.878	0.11	-0.14	0.36	.382
D	91	120.34	-0.312	-0.04	-0.27	0.20	.756

95% confidence intervals

Table 7: Recoded respondents only: all forms of antisemitism, by individual degree subject (in comparison to all other graduates)

				d			
Subject Area	N	DF	t	Est.	Low	High	p
GeAs							
Ps., Co.	30	33.62	-2.266	-0.36	-0.68	-0.04	.030
Ec.	21	21.45	-2.034	-0.46	-0.93	0.01	.055
JpAs							
Ps., Co.	30	34.08	-3.792	-0.58	-0.88	-0.27	.001
Ec.	21	22.75	-2.757	-0.46	-0.81	-0.12	.011
AzAs							
Ps., Co.	30	32.18	-0.027	-0.01	-0.39	0.38	.978
Ec.	21	21.52	-1.246	-0.27	-0.73	0.18	.226

95% confidence intervals
Ps. = Psychology, Co. = Counselling, Ec. = Economics

B (formerly Subject Areas 3 and 2, respectively). This reclassification destroyed any effects associated with Subject Area 3, and created a weak negative effect on Judeophobic Antisemitism associated with Subject Area B, which appears statistically significant.

This finding suggests that the negative association of some forms of antisemitism with Subject Area 3 was an artefact of the JACS 3.0 placement of Psychology in the Biological Sciences category. It could also suggest that a negative effect associated with Subject Area B subjects other than Economics had been masked by a positive effect associated with Economics graduates. For this reason, it was considered necessary to look at the re-classified graduates in isolation in an exploratory analysis to be reported below.

However, following application of the Holm-Bonferroni correction with the assumption of an unchanged family of hypotheses, and with an (unchanged) cut-off of $p < .050$, the overall findings remain unchanged from those reported in the previous section: the only significant associations were found between Subject Area G and GeAs and between Subject Area G and JpAs. That is, although there were some changes with regard to the associations which appear statistically significant following recoding, none of the raw p-values that were subject to change were low enough in either case to be considered significant once account has been taken of the large number of hypotheses being tested.

6 Exploratory analysis

The above observations suggest that there may be something unusual about the academic subjects that were recoded in order to bring the categorising more closely into line with the typical faculty structure of a UK university. To further investigate this possibility, an exploratory analysis was conducted which treated them separately.

Table 7 presents an analysis of re-coded responses only, treating Economics graduates as a single group, and treating graduates of Psychology and Counselling as another single group. The Holm-Bonferroni correction is no longer employed from this point onwards, as this additional analysis complicates the question of how many hypotheses there are; it should, however, be remembered that a great many hypotheses have now been tested.

The exploratory analysis presented here finds that, within the sample, levels of Judeophobic Antisemitism were significantly lower among members of *both* of these groups of respondents than they were among respondents who had graduated from other subject areas — this being a medium effect with regard to Psychology and Counselling graduates, and a small (although nearly medium-sized) effect with regard to Economics graduates — while levels of Antizionist Antisemitism were almost exactly average for Psychology and Counselling graduates and slightly below average for Economics graduates — this being a small and non-significant effect. These associations combined to produce a small and significant negative effect with regard to Generalised Antisemitism that was associated with having studied Psychology or Counselling, and a larger (indeed, nearly medium-sized) but non-significant negative effect on the same that was associated with having studied Economics. Numbers of respondents in both groups were small, however, especially with regard to Economics, such that the analysis must be considered to be under-powered. That is, the number of respondents in each category was too low to produce a statistically significant result in the absence of an especially large effect.

As with all exploratory analyses, the findings presented in this section must be treated as strictly contingent on follow-up through confirmatory analysis of freshly collected data. This is especially true, given that the findings which motivated this particular exploratory analysis lost statistical significance following application of the Holm-Bonferroni correction for multiple comparisons.

7 Discussion

This study has found that graduates score significantly less than non-graduates for Generalised Antisemitism and for Judeophobic Antisemitism, and graduates of historical and philosophical disciplines score significantly less than other graduates on the same measures. It has also found that graduates of these disciplines score less than other graduates with regard to Antizionist Antisemitism, although the significance of that finding disappears following correction for

multiple comparisons. Those who study languages appeared to score slightly lower for Judeophobic Antisemitism, although the statistical significance of that finding was very marginal. Moreover, this study has found that Engineering graduates score more highly than other graduates with regard to all three forms of antisemitism, although — again — the significance of this finding disappears following correction for multiple comparisons. There is also a suggestion that graduates of some behavioural science and related disciplines — that is, Psychology, Counselling, and Economics — may score lower for Generalised Antisemitism and Judeophobic Antisemitism, and (in the case of Economics) possibly also Antizionist Antisemitism as well, although these associations are highly tentative.

How might these findings be interpreted? It seems plausible that the study of human personality, thought, and behaviour might increase empathy, or attract students with greater empathy, and we note that the idea of a negative relationship between empathy and prejudice (including racial prejudice) is intuitive, and has empirical support.[7] (Here it should be noted that the JACS 3.0 category for the study of languages also includes the study of literatures in English and other languages, and that the reading of literature has been argued to increase empathy.)[8]

Alternatively, it may be that the study of such matters renders one better able to recognise the absurdities inherent in the conspiracist modes of reasoning that are inherent in antisemitic bigotry specifically.[9] The possibility that Economics

[7]Krystina A. Finlay and Walter G. Stephan, 'Improving Intergroup Relations: The Effects of Empathy on Racial Attitudes', *Journal of Applied Social Psychology*, 30 (2000), 1720–37 <https://doi.org/j.1559-1816.2000.tb02464.x>; Sofia Stathi and others, 'Psychopathy and Prejudice: The Mediating Role of Empathy, Social Dominance Orientation and Right-Wing Authoritarianism', *Journal of Theoretical Social Psychology*, 5.4 (2021), 530–41 <https://doi.org/10.1002/jts5.116>; Theresa. K. Vescio, Sechrist Gretchen B., and Matthew P. Paolucci, 'Perspective Taking and Prejudice Reduction: The Mediational Role of Empathy Arousal and Situational Attributions', *European Journal of Social Psychology*, 33 (2003), 455–72 <https://doi.org/10.1002/ejsp.163>.

[8]Maja Djikic, Keith Oatley, and Mihnea C. Moldoveanu, 'Reading Other Minds: Effects of Literature on Empathy', *Scientific Study of Literature*, 3.1 (2013), 28–47 <https://doi.org/10.1075/ssol.3.1.06dji>; Eva Maria (Emy) Koopman and Frank Hakemulder, 'Effects of Literature on Empathy and Self-Reflection: A Theoretical-Empirical Framework', *Journal of Literary Theory*, 9.1 (2015), 79–111 <https://doi.org/10.1515/jlt-2015-0005>.

[9]For more on the association between conspiracism and antisemitism, see Norman Cohn, *Warrant for Genocide: The Myth of the Jewish World-Conspiracy and the Protocols of the Elders of Zion* (London: Eyre & Spottiswoode, 1967); Michael Billig, *Fascists: A Social Psychological View of the National Front* (London, New York, San Francisco: Academic Press, 1978); Michael Barkun, *A Culture of Conspiracy: Apocalyptic Visions in Contemporary America* (Los Angeles: University of California Press, 2003); Jovan Byford, *Conspiracy Theories: A Critical Introduction* (Basingstoke: Palgrave Macmillan, 2011); Daniel Allington and Tanvi Joshi, '"What Others Dare Not Say": An Antisemitic Conspiracy Fantasy and Its YouTube Audience', *Journal of Contemporary Antisemitism*, 3.1 (2020), 35–53 <https://doi.org/10.26613/3.1.42>; Daniel Allington, Beatriz L. Buarque, and Daniel Barker Flores, 'Antisemitic Conspiracy Fantasy in the Age of Digital Media: Three "Conspiracy Theorists" and Their YouTube Audiences', *Language and Literature*, 30.1 (2021), 78–102 <https://doi.org/10.1177/0963947020971997>; Sebastian Schuller, 'World Conspiracy Literature and Antisemitism', *TRANSIT*, 13.1 (2021), 194–206 <https://transit.berkeley.edu/2021/schuller-conspiracyliterature/>; Allington, Hirsh,

in particular might serve in this way as an antidote to conspiracism was twice raised by Karl Popper in his seminal essay on what he called 'the conspiracy theory of society', i.e. the idea that the explanation for social phenomena is to be found in human intentionality as manifest in secret plots. Popper raised this possibility both in his presentation of Karl Marx as a critic of conspiracism (in contrast to some of Marx's followers, a proportion of whom he regarded as conspiracy theorists in their own right), and in his use of an example grounded in more conventional economic theory in order to illustrate how social consequences may inexorably follow from actions which were in no sense intended to produce those consequences (whether secretly or otherwise):

> Marx ... *was one of the first critics of the conspiracy theory*, and one of the first to analyse the unintended consequences of the voluntary actions of people acting in certain social situations. ... Marx said quite definitively and clearly ... that the capitalist ... is as unfree as the worker, and the results of his [sic] actions are largely unintended.[10]

> [In a free market, w]hoever wants to sell something always depresses the market value of what he [sic] wants to sell[, and] whoever wants to buy something raises the market value of what he [sic] wants to buy. ... But ... the man [sic] who wants to sell something has usually no intention of lowering the market price, and ... the man [sic] who wants to buy something has no intention of raising it.[11]

Such a possibility was also raised in a more recent critique of the borderline-conspiracist economic rhetoric employed by populist politicians of the left and right, especially in ideas of the 'rigged system' and of opposition between 'the 99%' and 'the 1%': notions arising from modes of thinking to which both Marxian and mainstream Economics would give short shrift.[12]

However, all interpretations of this study's findings must remain speculative until further data are collected. As emphasised above, sample sizes were small with regard to all subject areas, and even more so with regard to specific disciplines, which was still more of an issue with Economics than with combined Psychology and Counselling, with the result that the generalisability of findings is questionable. It is only with regard to the negative association of antisemitism with degree-level education in general, and with historical and philosophical studies in particular, that the current study provides robust evidence.

---

and Katz, 'Antisemitism Is Predicted by Anti-Hierarchical Aggression, Totalitarianism, and Belief in Malevolent Global Conspiracies'.

[10] Karl Popper, 'The Conspiracy Theory of Society', in *Conspiracy Theories: The Philosophical Debate*, ed. by David Coady (London / New York: Routledge, 2006 [1972]), pp. 13–15 (p. 14) (fn. 1, emphasis in original).

[11] Popper, p. 14.

[12] Matt Bolton and Frederick Harry Pitts, *Corbynism: A Critical Approach* (Bingley: Emerald Publishing Limited, 2018), pp. 208–17.

8 Limitations and scope for future work

The main limitation of this study is one of statistical power. One of the major determinants of this is sample size. While the overall sample was large, it was designed to be representative of the general UK population, which meant that there were few graduates of degree programmes in any specific subject area. This means that, while the study was adequately powered with regard to measurement of differences between graduates and non-graduates, it was inadequately powered with regard to weaker effects and less popular subject areas. Collection of larger samples of graduates in specific subject areas would be necessary to provide more robust hypothesis tests; dependent on the research design and analytic strategy, it might then become possible to apply controls.

This is in part because statistical power is compromised by large numbers of hypotheses, which includes hypotheses for the primary variable of interest as well as for variables introduced only as controls. A research design that involved fewer hypothesis tests, for example focusing only on those subject areas that have in this preliminary study been found to have a potential association (positive or negative) with antisemitism, would mitigate the problem of multiple comparisons, potentially enabling smaller effects to be measured at a statistically significant level without increasing the sample size. Further advantages might follow from the exclusion of graduates falling into multiple categories, since this would make it possible to employ forms of analysis such as ANOVA or ANCOVA, thus drastically reducing the number of comparisons (at least until post-hoc tests were carried out). Use of ANCOVA would additionally facilitate the application of demographic controls (which are not possible to incorporate in analyses reliant upon ANOVA or the t-test). However, such exclusion might cause problems with sample size, due to the popularity of joint honours awards in the UK.

An alternative approach to reduction in number of hypothesis tests would be to formulate hypotheses either (a) solely in relation to overall scores on the Generic Antisemitism scale (reducing the number of hypotheses by two thirds), or (b) solely with regard to scores on the Judeophobic Antisemitism and Antizionist Antisemitism subscales (reducing the number of hypotheses by a third, but preserving more information). This would be theoretically justified, given that Generic Antisemitism is conceptualised as the overlap between Judeophobic Antisemitism and Antizionist Antisemitism, such that it is unclear that hypotheses regarding the scale and hypotheses regarding its two subscales should really be regarded as separate. It would, of course, still be possible to follow up analysis with regard to Generic Antisemitism with post-hoc or exploratory analysis of its subscales, or vice versa. Provided that these were presented carefully, this would not necessarily require correction for multiple comparisons with regard to whichever of these analyses were to be regarded as primary.

The use of a cross-sectional research design was problematic in that it enabled the estimation of association without providing an opportunity to investigate

causation. The ideal means by which to test causal hypotheses, i.e. a controlled experiment, would be impractical for this purpose, because there is no plausible equivalent to college-level education which can be provided within such a setting. However, researchers might feasibly compare levels of antisemitism in students who were about to engage in certain courses of study and in students who had completed those courses of study, whether using a paired test (if data were to be collected from the same students, permitting direct measurement of a change in attitudes), or an independent-samples test (if the data were to be collected from different cohorts of students, providing the practical advantage of simultaneous data collection). A study of either type would be relatively difficult to conduct, however, and might perhaps best be carried out following successful replication of relevant findings in a cross-sectional study with greater power.

A further area to consider is that of potential drawbacks to the use of a measurement instrument reliant on collecting levels of agreement and disagreement with statements affirming or rejecting antisemitic ideas. It has been argued that such instruments have been argued to measure subjects' ability to guess the researchers' intentions and thereby to avoid giving social undesirable answers.[13] Use of an alternative measurement instrument, such as a set of manipulated scenarios, might serve to mitigate the latter difficulty in testing the hypothesis that study of certain subject areas is associated with lower levels of antisemitism — although it should be noted that antisemitism of the kind that the Generalised Antisemitism scale was designed to measure has often been able to present itself as virtuous,[14] and thus might perhaps be less subject to social desirability bias. Moreover, we would suggest that the use of such methods (which have not yet been validated or standardised in relation to the measurement of antisemitism) might ideally follow more direct replication of the findings presented here.

9 Technical note

Data analysis was carried out in R v. 4.3.1,[15] with the additional use of a number of R packages, notably including `MESS` v. 0.5.12 for power analysis,[16] `dplyr` v. 1.1.2 for data manipulation,[17] `knitr` v. 1.43 for preparation of drafts,[18]

[13] Jay P. Greene, Albert Cheng, and Ian Kingsbury, *Education and Anti-Semitism* (University of Arkansas: Education Reform Faculty and Graduate Students Publications, 2021) <https://scholarworks.uark.edu/edrepub/121/>.

[14] Jean Améry, 'Virtuous Antisemitism', in *Essays on Antisemitism, Anti-Zionism, and the Left*, ed. by Jean Améry and Marlene Gallner, trans. by Lars Fischer (Bloomington: Indiana University Press, 1969), pp. 34–40.

[15] R Core Team, *R: A Language and Environment for Statistical Computing* (Vienna, Austria: R Foundation for Statistical Computing, 2023) <https://www.R-project.org/>.

[16] Claus Thorn Ekstrøm, *MESS: Miscellaneous Esoteric Statistical Scripts*, 2023 <https://CRAN.R-project.org/package=MESS>.

[17] Hadley Wickham and others, *dplyr: A Grammar of Data Manipulation*, 2022 <https://CRAN.R-project.org/package=dplyr>.

[18] Yihui Xie, *knitr: A Comprehensive Tool for Reproducible Research in R*, ed. by Victoria Stodden, Friedrich Leisch, and Roger D. Peng (Chapman; Hall/CRC, 2014).

`kableExtra` v. 1.3.4.9000 for formatting of tables,[19] and `ggplot2` v. 3.4.3 for visualisation.[20]

10 Funding statement

Data collection was funded by Campaign Against Antisemitism and from the lead author's personal research allowance at King's College London.

11 Ethics statement

Data collection and processing followed research ethics and data protection policies at YouGov and King's College London. Ethical clearance was obtained from the Research Ethics Office at King's College London, reference number MRA-22/23-34616.

References

Allington, Daniel, Beatriz L. Buarque, and Daniel Barker Flores, 'Antisemitic Conspiracy Fantasy in the Age of Digital Media: Three "Conspiracy Theorists" and Their YouTube Audiences', *Language and Literature*, 30.1 (2021), 78–102 <https://doi.org/10.1177/0963947020971997>

Allington, Daniel, David Hirsh, and Louise Katz, 'Antisemitism Is Predicted by Anti-Hierarchical Aggression, Totalitarianism, and Belief in Malevolent Global Conspiracies', *Humanities and Social Sciences Communications*, 10.155 (2023) <https://doi.org/10.1057/s41599-023-01624-y>

———, 'The Generalised Antisemitism (GeAs) Scale: A Questionnaire Instrument for Measuring Antisemitism as Expressed in Relation Both to Jews and to Israel', *Journal of Contemporary Antisemitism*, 5.1 (2022), 37–48 <https://doi.org/10.26613/jca/5.1.99>

———, 'The Generalised Antisemitism (GeAs) Scale: Validity and Factor Structure', *Journal of Contemporary Antisemitism*, 5.2 (2022), 1–28 <https://doi.org/10.26613/jca/5.2.113>

———, 'The Relationship Between Antisemitic Attitudes and Conspiracy Beliefs: A Cross-Sectional Study of UK-Resident Adults', *Contemporary Jewry*, 2023 [in press]

Allington, Daniel, and Tanvi Joshi, '"What Others Dare Not Say": An Antisemitic Conspiracy Fantasy and Its YouTube Audience', *Journal of Contemporary Antisemitism*, 3.1 (2020), 35–53 <https://doi.org/10.26613/3.1.42>

Améry, Jean, 'Virtuous Antisemitism', in *Essays on Antisemitism, Anti-Zionism, and the Left*, ed. by Jean Améry and Marlene Gallner, trans. by Lars Fischer (Bloomington: Indiana University Press, 1969), pp. 34–40

[19] Hao Zhu, *kableExtra: Construct Complex Tables with 'Kable' and Pipe Syntax*, 2021 <https://CRAN.R-project.org/package=kableExtra>.

[20] Hadley Wickham, *ggplot2: Elegant Graphics for Data Analysis* (New York: Springer-Verlag, 2016) <https://ggplot2.tidyverse.org>.

Barkun, Michael, *A Culture of Conspiracy: Apocalyptic Visions in Contemporary America* (Los Angeles: University of California Press, 2003)

Billig, Michael, *Fascists: A Social Psychological View of the National Front* (London, New York, San Francisco: Academic Press, 1978)

Bolton, Matt, and Frederick Harry Pitts, *Corbynism: A Critical Approach* (Bingley: Emerald Publishing Limited, 2018)

Byford, Jovan, *Conspiracy Theories: A Critical Introduction* (Basingstoke: Palgrave Macmillan, 2011)

Cohen, Jacob, *Statistical Power Analysis for the Behavioural Sciences*, *Psychology Press* (Lawrence Erlbaum Associates, 1988)

Cohn, Norman, *Warrant for Genocide: The Myth of the Jewish World-Conspiracy and the Protocols of the Elders of Zion* (London: Eyre & Spottiswoode, 1967)

Djikic, Maja, Keith Oatley, and Mihnea C. Moldoveanu, 'Reading Other Minds: Effects of Literature on Empathy', *Scientific Study of Literature*, 3.1 (2013), 28–47 <https://doi.org/10.1075/ssol.3.1.06dji>

Ekstrøm, Claus Thorn, *MESS: Miscellaneous Esoteric Statistical Scripts*, 2023 <https://CRAN.R-project.org/package=MESS>

Fine, Robert, and Philip Spencer, *Antisemitism and the Left: On the Return of the Jewish Question* (Manchester: Manchester University Press, 2017)

Finlay, Krystina A., and Walter G. Stephan, 'Improving Intergroup Relations: The Effects of Empathy on Racial Attitudes', *Journal of Applied Social Psychology*, 30 (2000), 1720–37 <https://doi.org/j.1559-1816.2000.tb02464.x>

Frindte, W., S. Wettig, and D. Wammetsberger, 'Old and New Anti-Semitic Attitudes in the Context of Authoritarianism and Social Dominance Orientation: Two Studies in Germany', *Peace Conflict: Journal of Peace Psychology*, 11.3 (2005), 239–66 <https://doi.org/10.1207/s15327949pac1103_3>

Greene, Jay P., Albert Cheng, and Ian Kingsbury, *Education and Anti-Semitism* (University of Arkansas: Education Reform Faculty and Graduate Students Publications, 2021) <https://scholarworks.uark.edu/edrepub/121/>

Hirsh, David, *Anti-Zionism and Antisemitism: Cosmopolitan Reflections* (New Haven: Yale Initiative for the Interdisciplinary Study of Antisemitism, 2007)

———, *Contemporary Left Antisemitism* (Abingdon: Routledge, 2017)

Hirsh, David, and Hilary Miller, 'Durban Antizionism: Its Sources, Its Impact, and Its Relation to Older Anti-Jewish Ideologies', *Journal of Contemporary Antisemitism*, 5.1 (2022), 21–36 <https://doi.org/10.26613/jca/5.1.98>

Kaplan, E. H., and C. A. Small, 'Anti-Israel Sentiment Predicts Anti-Semitism in Europe', *Journal of Conflict Resolution*, 50.548 (2006) <https://doi.org/https://www.jstor.org/stable/27638506>

Koopman, Eva Maria (Emy), and Frank Hakemulder, 'Effects of Literature on Empathy and Self-Reflection: A Theoretical-Empirical Framework', *Journal of Literary Theory*, 9.1 (2015), 79–111 <https://doi.org/10.1515/jlt-2015-0005>

Laqueur, Walter, *The Changing Face of Anti-Semitism: From Ancient Times to the Present Day* (Oxford: Oxford University Press, 2006)

Lipstadt, Deborah, *Antisemitism: Then and Now* (London / Victoria: Scribe, 2019)

Nelson, Cary, *Israel Denial: Anti-Zionism, Anti-Semitism, and the Faculty Campaign Against the Jewish State* (Washington, DC / Bloomington, IN: Academic Engagement Network / Indiana University Press, 2019)

Popper, Karl, 'The Conspiracy Theory of Society', in *Conspiracy Theories: The Philosophical Debate*, ed. by David Coady (London / New York: Routledge, 2006 [1972]), pp. 13–15

R Core Team, *R: A Language and Environment for Statistical Computing* (Vienna, Austria: R Foundation for Statistical Computing, 2023) <https://www.R-project.org/>

Rich, Dave, *The Left's Jewish Problem: Jeremy Corbyn, Israel, and Anti-Semitism* (London: Biteback Publishing, 2016)

Schuller, Sebastian, 'World Conspiracy Literature and Antisemitism', *TRANSIT*, 13.1 (2021), 194–206 <https://transit.berkeley.edu/2021/schuller-conspiracyliterature/>

Seymour, David M., 'Antisemitism and Antizionism: Ideologies of the Jewish Question', *Journal of Contemporary Antisemitism*, 2.2 (2019)

Staetsky, L. Daniel, *Antisemitism in Contemporary Great Britain: A Study of Attitudes Towards Jews and Israel* (London: Institute for Jewish Policy Research, 2017)

———, 'The Left, the Right, Christians, Muslims, and Detractors of Israel: Who Is Antisemitic in Great Britain in the Early 21st Century?', *Contemporary Jewry*, 40 (2020), 259–92 <https://doi.org/10.1007/s12397-020-09335-1>

Stathi, Sofia, Sajid Humayun, Reay Stoddart Isaac, and Demi M. McCarron, 'Psychopathy and Prejudice: The Mediating Role of Empathy, Social Dominance Orientation and Right-Wing Authoritarianism', *Journal of Theoretical Social Psychology*, 5.4 (2021), 530–41 <https://doi.org/10.1002/jts5.116>

Taguieff, Pierre-André, *Rising from the Muck: The New Anti-Semitism in Europe* (Chicago: Ivan R. Dee, 2004)

Vescio, Theresa. K., Sechrist Gretchen B., and Matthew P. Paolucci, 'Perspective Taking and Prejudice Reduction: The Mediational Role of Empathy Arousal and Situational Attributions', *European Journal of Social Psychology*, 33 (2003), 455–72 <https://doi.org/10.1002/ejsp.163>

Wickham, Hadley, *ggplot2: Elegant Graphics for Data Analysis* (New York: Springer-Verlag, 2016) <https://ggplot2.tidyverse.org>

Wickham, Hadley, Romain François, Lionel Henry, and Kirill Müller, *dplyr: A Grammar of Data Manipulation*, 2022 <https://CRAN.R-project.org/package=dplyr>

Wistrich, Robert, *The Politics of Ressentiment: Israel, Jews, and the German Media* (Jerusalem: Vidal Sassoon International Center for the Study of Antisemitism, 2004)

Xie, Yihui, *knitr: A Comprehensive Tool for Reproducible Research in R*, ed. by Victoria Stodden, Friedrich Leisch, and Roger D. Peng (Chapman; Hall/CRC, 2014)

Zhu, Hao, *kableExtra: Construct Complex Tables with 'Kable' and Pipe Syntax*, 2021 <https://CRAN.R-project.org/package=kableExtra>