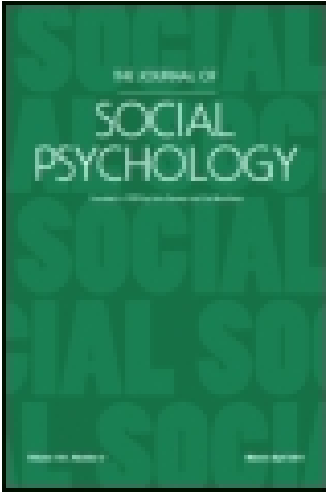


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# Intergroup Contact, Prejudicial Attitudes, and Policy Preferences: The Case of the U.S. Military's "Don't Ask, Don't Tell" Policy

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**ABSTRACT.** Data from 115,052 active United States military personnel were analyzed to explore links between contact with gay people and attitudes about repealing "Don't Ask, Don't Tell." Results showed that prejudice against homosexuals significantly mediated the association between contact and supporting repeal of "Don't Ask, Don't Tell"; *quality of contact in the military* was a stronger predictor than other measures of contact. Quality and quantity of contact interacted: more contact *quantity* had opposing statistical effects on policy attitudes for people experiencing high versus low *quality* contact. Findings are discussed in terms of contact theory, the association between intergroup attitudes and policy preferences, and practical implications for situations in which groups' access to new positions or roles is limited, and hence contact opportunities are rare.

**Keywords:** "don't ask, don't tell", intergroup contact, policy attitudes, prejudice

SOCIAL POLICY OFTEN HAS ITS MOST immediate implications for specific groups of individuals: racial profiling laws most directly influence individuals of certain racial groups; abortion regulations have more direct effects on women than men; social security policy most immediately implicates older adults (albeit, most of us hope to one day join that group); education policy implicates students (and often their parents) more than those not involved in the educational system. This group-relatedness of certain policies suggests that attitudes about the *groups* impacted by the policy might influence endorsement of the policy. The current article examines whether contact with members of specific outgroups is associated with attitudes towards those groups and group-related policies, and more specifically whether contact's association with policy endorsement is mediated by group-related attitudes. It also considers whether certain forms of contact (i.e., contact more relevant to the specific policy) might have larger associations with policy attitudes.

Individual feelings about public policy do not always influence actual policy decisions (e.g., U.S. public policy concerning gun ownership does not reflect public attitudes: Barry, McGinty, Vernick, & Webster, 2013). However, policy often follows trends in public opinion, and in the case of ballot measures people can directly translate their attitudes into policy (Krysan, 2000). In other cases (as with the data examined here), expressions of policy-related attitudes explicitly

inform decision-makers' actions in recommending policy change. Therefore, in most democratic contexts, attitudes about public policy have some impact on actual policy change.

People in groups most directly helped (or harmed) by policies typically have the most positive (or negative) attitudes towards those policies. Caregivers for older people are more supportive of financial support for caregiving (Silverstein & Parrott, 2001); Blacks are more supportive of policies supporting equal treatment in hiring than Whites (Schuman, Steeh, Bobo, & Krysan, 1997). Less directly, people with more positive attitudes about groups also tend to be more supportive of group-favoring policies, and likewise the prejudiced tend to oppose such policy. People who are more positively disposed towards older adults tend to favor public retirement funding (Binstock, 2010); measures of modern racism predict attitudes about taxation policies concerning education for ethnic minority groups (Alvarez & Brehm 1997); general racism affects attitudes about policies to redress racial inequalities (Bobo & Kluegel, 1997).

Moving back down the causal chain, contact between social groups plays into this policy-preference process. Young people who have extensive contact with their grandparents in childhood are more supportive of public retirement assistance than their peers without positive grandparent relationships (Silverstein & Parrott, 1997); contact between older and younger people within the family presumably sensitizes grandchildren to older adults' life circumstances. However, this work does not examine specific mechanisms by which interpersonal contact might influence policy support. One well-demonstrated effect of interpersonal contact between members of different groups is that it improves group-related attitudes. Building from the pioneering work of Allport (1954), a large body of research shows that this effect is reliable (Pettigrew & Tropp, 2006), and extends across a wide variety of contact experiences and groups.

Despite some suggestions to the contrary (Dixon, Durrheim, & Tredoux, 2005), the weight of current evidence is that contact can also influence attitudes about policy (e.g., Swart, Hewstone, Christ, & Voci, 2010). Pettigrew and Tropp (2011) suggest that a form of stimulus generalization is at play when looking at the relationship between contact and policy attitudes. Essentially, they suggest that attitudes about people are perhaps closer to lived experiences, and policy-related attitudes are a little more distal from immediate contact experiences.

This article integrates the ideas that contact influences group attitudes and that group attitudes influence policy support by exploring a mediated model in which intergroup contact predicts group-based attitudes, and those attitudes predict policy. It does so in the context of the U.S. Department of Defense's "Don't Ask, Don't Tell" (DADT) policy concerning gay people serving in the U.S. military. This policy, established in 1993, specified that gay people serving in the U.S. military could do so only if they kept their sexuality secret ("don't tell"): it also specified that the military could not investigate or directly inquire about an individual's sexuality without direct evidence ("don't ask"). The policy was repealed on September 20, 2011. The repeal was partially based on survey responses from Service members who were asked about the effects of repeal on their ability to do their jobs. In a press conference recommending repeal of the policy, then-U.S. Defense Secretary Robert Gates said "In my view, the concerns of combat troops as expressed in the survey do not present an insurmountable barrier to successful repeal of 'Don't Ask, Don't Tell'" (Garamone, 2010, para. 6). These survey responses explicitly assessed quality and quantity of contact between Service members and gay individuals both in the military and outside; a limited number of questions also indirectly assessed prejudice against homosexuals. As a result, the data permit testing of a theoretical model involving multiple areas of contact, group-based attitudes, and group-relevant policy attitudes. The specific model being examined

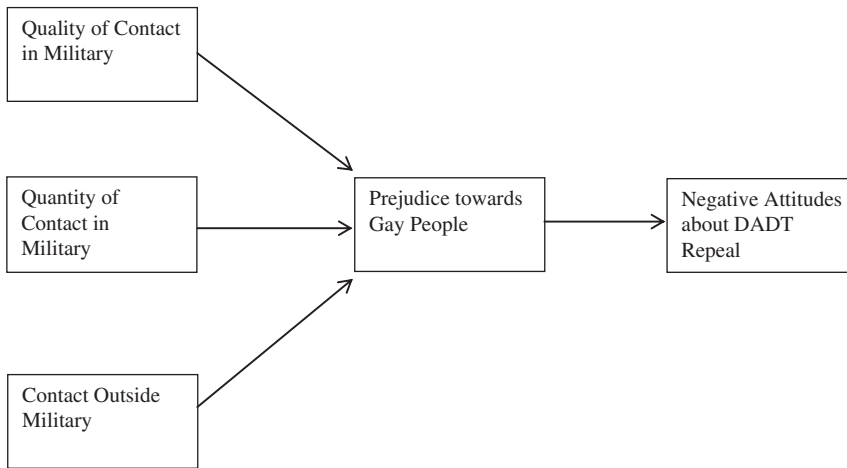


FIGURE 1 Conceptual model illustrating connections between contact with gay people, general group attitudes, and group-related policy attitudes.

is illustrated in Figure 1. The data are cross-sectional, and hence while they can inform discussion of causal effects, the paths in the Figure represent associations, not unequivocal causal effects.

## METHOD

### Data and Exclusions

The data reflect responses of 115,052 active Service members from the entire United States military.<sup>1</sup> These individuals were surveyed during 2010 concerning their likely responses if DADT was repealed, their more general feelings about serving with gay colleagues, and their prior contact with gay people. A report on the data was prepared for the Department of Defense (DoD) by Westat (2010). The data were obtained via a U.S. Freedom of Information Act request filed with the DoD in December of 2010; the redacted data were supplied in January of 2014. Redactions to the data included removal of certain respondent demographics (notably sex and age), and other variables that might identify Service members.

Critically, the data do not identify individuals as gay or straight. The lack of identification is clearly a function of the policy environment in which the survey took place: DADT explicitly forbade disclosure (or requests for disclosure) of homosexual orientation, and hence a survey from the DoD could not ask for it to be disclosed. The analysis performed here therefore requires consideration of the effects of gay Service members on the results. Prior to repeal of DADT, about 2.2% of all military personnel were estimated to be gay, including about 0.9% of active duty personnel (Gates, 2010). Therefore, while there are undoubtedly gay respondents in the data, they did not make up a huge proportion of the respondents. Nonetheless, gay Service members would probably score differently on many measures of support for DADT—the policy directly

threatened their presence in the military and hence it is very unlikely that they would be supportive of it. As described in the introduction, there are considerable data suggesting that groups targeted by policies have quite different attitudes towards those policies than the rest of the population, and those differences are likely to be exacerbated in cases where there is clear self-interest related to the policy. In these data, the only plausible proxy for being gay was a self-reported item on whether the respondent had any “family members, friends, or acquaintances who are gay or lesbian, or whom you believe to be gay or lesbian” to which the response options were *no*; *yes, one*; or *yes, more than one*. Gay people are more likely to have gay friends than straight people, and almost all gay people have more than one gay friend (Galupo, 2007). Hence, excluding people who responded “more than one” on this measure seemed likely to exclude almost all gay respondents. Of course, it also excludes a large number of straight respondents who are likely to skew towards liberal political orientations and younger age groups (Pew, 2007). Analyses are run both with and without this exclusion; consistent findings across the broad sample and the narrower “conservative-straight” sample would suggest a good degree of stability in the results and suggest that gay respondents did not substantively influence the findings. The specific measures are described next.

### Contact With Gay Friends and Family

This was assessed with the single item referenced in the previous paragraph. In analyses involving the entire sample, this variable had three levels (“yes, more than one gay friend/family member”:  $N = 45,793$ , 39.8% of sample; “yes, one gay friend/family member”:  $N = 20,937$ , 18.2%, or “no”  $N = 43,364$ , 37.7% of sample). For analyses in which the “more than one” group was excluded, only the latter two groups were used.

### Quantity of Contact With Gay Service Members

Contact within the military was assessed with six Yes/No items: “Do you currently serve with a male or female Service member you believe to be homosexual?”, “In your career, have you ever worked in a unit with a coworker you believed to be homosexual?”, “Did you ever serve in combat with a Service member of any rank whom you believed to be homosexual?”, “Have you ever shared a room, berth, or field tent with a Service member you believe to be homosexual?”, “Have you ever been assigned to share bath facilities with an open bay shower that is also used by a Service member you believe to be homosexual?”, and “In your career, have you ever worked in a unit with a subordinate you believed to be homosexual?” Positive responses to these six items were summed for a total contact quantity measure ( $M = 2.30$ ,  $SD = 1.83$ ; frequencies reported in Table 1). An additional question concerning serving with a *leader* believed to be homosexual was redacted by the DoD.

### Quality of Contact With Gay Service Members

For the gay person they had worked with, respondents were asked three questions concerning whether the effect of the gay person on the unit’s ability to work together, the unit’s morale, and the unit’s performance was either mostly positive (scored 3), about equally positive and

TABLE 1  
Frequencies of Reports of Contact With Gay Military Service Members

<i>Number of reported gay contacts</i>	<i>Frequency</i>	<i>%</i>
0	27,733	24.2
1	15,256	13.3
2	21,329	18.6
3	19,001	16.5
4	14,661	12.8
5	11,051	9.6
6	5,788	5.0
Total	114819	100.0

*Note:* 233 respondents were missing data on all items.

negative (scored 2) or mostly negative (scored 1). The same three questions were asked about the gay subordinate. For the gay coworker with whom they had served in combat, a single question was asked about the effect of the coworker on the unit's combat performance (response options were the same). These seven items were averaged to provide a single measure of quality of gay coworker experiences. As many respondents had not had all of these experiences with gay coworkers, the mean was computed from whatever responses were available from any individual. Hence for some people their score represents only a single experience with a gay Service member, while for others it might represent all three experiences. Even with this accommodation, this variable only has scores for about a third of the dataset ( $N = 37,503$ ,  $M = 1.66$ ,  $SD = .61$ ; for the  $N = 1234$  respondents who provided responses to all seven questions,  $\alpha = .97$ , 95% CI [.967, .973]). Respondents lacking any contact with (apparently) gay colleagues had missing data on this variable and were excluded from any analysis involving quality of contact within the military.

### Mediator Variable: Prejudice

The data did not contain explicit measures of prejudice. However, two items involved response options that indicated prejudiced responses to gay individuals, independent of DADT attitudes. One question asked "If a wartime situation made it necessary for you to share a room, berth or field tent with someone you believe to be a gay or lesbian Service member, which are you most likely to do?" Various response options were provided (e.g., "do nothing" or "talk to a chaplain, mentor or leader about how to handle the situation"). One response ("talk to a leader to see if I have other options") was coded as indicating prejudicial attitudes about gay Service members. A second question asked: "If a wartime situation made it necessary for you to share bathroom facilities with an open bay shower with someone you believe to be a gay or lesbian Service member, which are you most likely to do?" Among similar responses to the previous question, the responses "use the shower at a different time than the Service member I thought to be gay or lesbian" and "talk to a leader to see if I had other options" were coded as a prejudiced. The number of prejudiced responses across these two questions ( $\Phi = .55$ ) was summed to yield a 0–2 measure ( $M = .67$ ,  $SD = .81$ ).

## Criterion Variable: Attitudes Towards “Don’t Ask, Don’t Tell” Repeal

Many items asked about specific ways in which the respondent thought DADT repeal would affect their professional lives. These were measured on varying metrics and pertained to fairly distinct topics. Hence, initially eight separate scales were developed (see Table 2 for scales and sample items). However, the resulting variables were highly correlated, and factor analysis suggested that all of the scales made up a single factor (first eigenvalue = 5.53, second eigenvalue = .72). As a result, the eight scales were standardized and treated as a single measure (for the combination of

TABLE 2  
DADT Questions: Higher Scores Indicate More Support for DADT (i.e., More Negative Attitudes Towards Repeal)

<i>Theme (# items) α</i>	<i>Example item</i>	<i>Scale</i>
Leadership (5) .94	If Don’t Ask, Don’t Tell is repealed, how easy or difficult do you think it will be for leadership as they start implementing the policy to hold Service members to the high standards of military personal conduct regardless of their sexual orientation?	1–5, <i>very easy</i> – <i>very difficult</i>
Unit cohesion (8) .97	If Don’t Ask, Don’t Tell is repealed and you are working with a Service member in your immediate unit who has said he or she is gay or lesbian, how, if at all, would it affect. . . . How Service members in your immediate unit work together to get the job done	1–5, <i>very positively</i> – <i>very negatively</i>
Personal readiness (5) .92	If Don’t Ask, Don’t Tell is repealed and you are working with a Service member in your immediate unit who has said he or she is gay or lesbian, how, if at all, would it affect. . . . Your personal readiness?	1–5, <i>very positively</i> – <i>very negatively</i>
Unit readiness (3) .94	If Don’t Ask, Don’t Tell is repealed and you are working with a Service member in your immediate unit who has said he or she is gay or lesbian, how, if at all, would it affect. . . . Your immediate unit’s readiness?	1–5, <i>very positively</i> – <i>very negatively</i>
Partner/spouse feelings (1)	If Don’t Ask, Don’t Tell is repealed, how, if at all, would the way your significant other (or spouse) feels about your military service be affected?	1–5, <i>very positively</i> – <i>very negatively</i>
Family feelings (1)	If Don’t Ask, Don’t Tell is repealed, how, if at all, would the way the rest of your family feels about your military service be affected?	1–5, <i>very positively</i> – <i>very negatively</i>
Rec. military to family (1)	If DADT is repealed, how, if at all, will it affect your willingness to recommend to a family member or close friend that he or she join the military?	1–3, <i>positively</i> – <i>negatively</i>
Personal career plans (1)	If DADT is repealed, how, if at all, will your military career plans be affected	1–5, <i>I will stay longer than I had planned</i> – <i>leave sooner than I planned</i>

*Note:* Confidence intervals for alpha coefficients are not reported; in all cases the upper/lower level CI limits deviate by .002 or less from the point estimate.

the eight scales in Table 2,  $\alpha = .93$ , 95% CI [.929, .932]). Higher scores on this scale indicated an overall opinion that repealing DADT would have a negative effect on military and personal readiness and morale; these are anti-repeal, and hence pro-DADT policy attitudes.

## Analysis

Most analyses were performed with Hayes' (2013) PROCESS macro for SPSS, model 4 (simple mediated model). To examine multiple predictors, multiple models were run with a single focal predictor and with the other predictors as covariates so as to estimate indirect effects from each predictor controlling for the others. Significance of mediated paths was assessed using the 95% bias corrected and adjusted confidence intervals from 1000 bootstrapped samples. Military pay grade (collapsed in a 1–3 scale) and marital status (married/not currently married) were controlled in all analyses, these being the only demographic variables available in the redacted data set. Being married was typically associated with more prejudice against gay people, and negative attitudes towards DADT repeal. Pay grade's relationship with the other variables depended on the specific model being run. In the full sample, high pay tended to be associated with more prejudice and negative attitudes about DADT repeal. Excluding respondents with more than one gay friend/ family member/ acquaintance (the proxy for potentially being gay), high pay was associated with positive attitudes about gay people and repealing DADT, although in some models these effects were nonsignificant. Traditional statistical significance levels (.05, two-tailed) were used in all analyses.

## RESULTS

Figure 2 displays the broadest test of the model. Statistics before the slashes indicate the test of the model with all subjects for whom complete data existed. All of the effects are significant, and almost all are in the predicted direction. All forms of contact are associated with reduced prejudice against gay people, and prejudice predicts a negative attitude towards repealing DADT. Direct effects from each of the predictors to the outcome are also significant, indicating that quality of contact and contact outside the military are negatively associated with pro-DADT (anti-repeal) attitudes, over and above the effects through the mediator. Surprisingly, the direct effect indicates that *quantity* of contact is associated with anti-repeal attitudes, even though the indirect path indicates that more contact leads to attitudes *supporting* repeal. The model accounts for a moderate amount of variance in the mediator, and a large amount in the outcome variable. The model was re-tested using only respondents who reported having one or zero gay friends or family members—the only means of attempting to exclude gay respondents. Results are after the slash in Figure 2. The broad parameters of the model are unchanged: all of the coefficients are significant, and in the same direction (including the positive direct effect from quantity of contact to the dependent variable [DV]). The variance explained is similar, although slightly smaller for both the mediator and the criterion variable.

A reduced version of the model was run excluding the quality of contact in the military variable, because of the substantial missing data on that variable. With this larger sample, the model showed very similar statistical effects for the remaining variables (Figure 3). In contrast to the



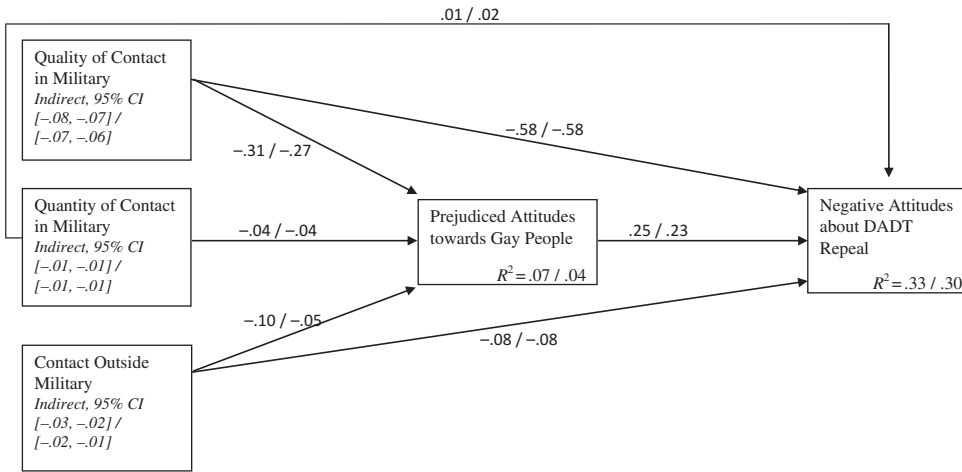


FIGURE 2 Coefficients on paths are unstandardized regression coefficients. Results for two models are presented: all participants without missing data ( $N = 35,294$ ) before slash, and only individuals with fewer than 2 gay friends or family members, ( $N = 22,416$ ) after the slash. The latter is intended to remove potentially-gay respondents. All path coefficients and  $R^2$  statistics are significant ( $p < .01$ ). Indirect effects for the effect from (a) predictor variable through (b) prejudiced attitudes towards homosexuals to (c) attitudes about repeal are reported in the respective predictor variable boxes. These are represented by the bootstrapped 95% confidence interval for the indirect path, as calculated in the PROCESS SPSS macro (Hayes, 2013).

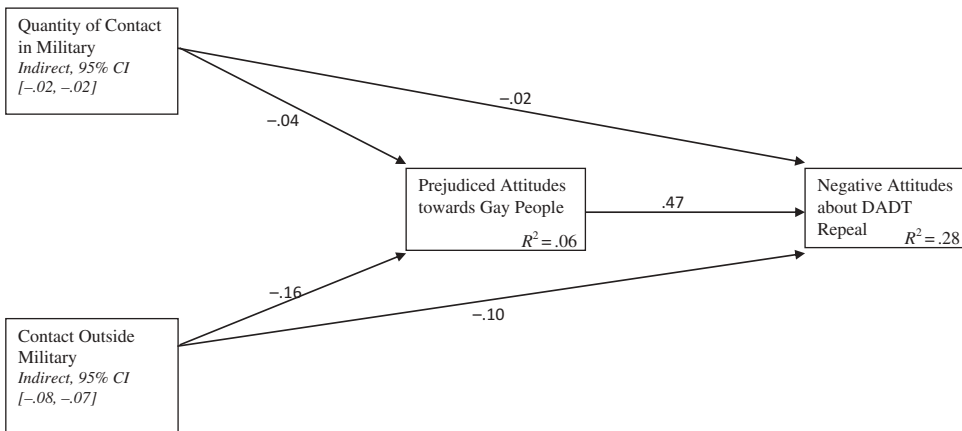


FIGURE 3 Results for model excluding the “quality of contact in the military” variable,  $N = 108,269$ . Coefficients on paths are unstandardized regression coefficients. All path coefficients and  $R^2$  statistics are significant (at least  $p < .01$ ). Indirect effects for the effect from (a) predictor variable through (b) prejudiced attitudes towards homosexuals to (c) attitudes about repeal are reported in the respective predictor variable boxes. These are represented by the bootstrapped 95% confidence interval for the indirect path, as calculated in the PROCESS SPSS macro (Hayes, 2013).

TABLE 3  
Effect Size (Partial Correlation) of Model Paths

	<i>Partial correlations</i>			
	<i>Quality of contact in military</i>	<i>Quantity of contact in military</i>	<i>Contact outside of military</i>	<i>Prejudiced attitudes</i>
1. Full model (Figure 2); $N = 35,294$				
Predicting mediator (prejudiced attitudes)	-.22	-.07	-.11	–
Predicting DV (anti-DADT repeal)	-.46	.03	-.11	.29
2. Model excluding possibly-gay respondents (Figure 2); $N = 22,416$				
Predicting mediator (prejudiced attitudes)	-.19	-.06	-.03	–
Predicting DV (anti-DADT repeal)	-.46	.05	-.06	.27
3. Model without quality of contact in military variable (Figure 3); $N = 108,269$				
Predicting mediator (prejudiced attitudes)	–	-.10	-.17	–
Predicting DV (anti-DADT repeal)	–	-.05	-.13	.47

*Note:* All effects are significant ( $p < .01$ ). Marital status and military pay grade are statistically controlled in all analyses. The top two blocks reflect analyses involving the quality of contact in the military variable, on which there was substantial missing data. The second block excludes respondents who could plausibly be gay (see text for details of exclusion procedure). The third block excludes the quality of contact in the military variable resulting in the much larger sample size.

Figure 2 models, the direct path from quantity of contact to the criterion variable was negative, reflecting the sign of the indirect path and the zero-order correlation.

The figures feature unstandardized coefficients, and hence do not provide a clear idea of effect sizes. Table 3 illustrates the effect size of paths in the model, represented as partial correlations. These were derived from multiple regression analyses predicting the mediator and the criterion variable respectively, incorporating all predictor and control variables from the models simultaneously; the criterion variable is not included in analyses predicting the mediator. Quality of contact in the military is a substantially stronger predictor of the mediator than the remaining contact variables. When examining prediction of the criterion variable, prejudiced attitude toward gay people (the mediator) is a strong predictor, but quality of contact in the military remains the strongest unique predictor by some distance. The effect sizes of the *indirect* effects were explored using kappa squared ( $\kappa^2$ ): This statistic represents “the proportion of the maximum possible indirect effect that could have occurred, had the constituent effects been as large as the design and data permitted” and hence has a minimum of zero and a maximum of one (Preacher & Kelley, 2011, p. 106). Again, this effect size shows that quality of military contact has larger indirect effects ( $\kappa^2 = .07$ , 95% CI [.066, .074]) than either quantity of contact in the military ( $\kappa^2 = .04$ , 95% CI [.036, .044]) or family/friend contact ( $\kappa^2 = .05$ , 95% CI [.045, .053]). Covariates and other predictors could not be included in the analyses of  $\kappa^2$ .

Given that the direct effect of quantity of contact on DADT attitudes shifted from negative to positive when quality of contact was in the model, an interaction between quality and quantity of contact was explored. Put simply, increasing *quantity* of contact when *quality is low* might decrease support for DADT repeal, even though increasing quantity overall increases support for

repeal. This possibility was explored using moderated regression (PROCESS model 1), including the mean-centered quality and quantity of contact measures, their interaction, and all other variables from the previous models as controls. The moderator term was significant ( $B = -.06, p < .001, 95\% \text{ CI } [-.07, -.05]$ ). Simple slopes showed that the association between contact quantity and anti-repeal attitudes was negative when quality of contact was 1SD above the mean ( $B = -.03, p < .001$ ), but positive at the mean ( $B = .01, p < .01$ ) and at 1SD below the mean ( $B = .04, p < .001$ ). This pattern persists when control variables are removed.<sup>2</sup>

## DISCUSSION

The data support four broad conclusions. First, the various forms of contact examined (quality and quantity, both within and outside the military) *independently* predict prejudiced attitudes towards homosexuals, and through those attitudes contact predicts policy-related attitudes. Second, contact also predicts policy attitudes independent of prejudice (i.e., there are significant direct effects of contact on attitudes about DADT, even when prejudiced attitudes are in the model). Third, *quality* of contact in the military is more strongly associated with policy attitudes than quantity of contact in the military or contact outside the military, both via indirect and direct paths. Fourth, quality and quantity of contact interact: increased quantity of contact in the absence of quality contact is associated with increased support for discriminatory policies.

The data clearly suggest that the effects of contact experiences on specific attitudes are tied to *context*. Attitudes about gay people in the military are tied more closely to quality of contact with gay people in the military than contact with gay individuals outside the military—even when those gay contacts outside the military are perhaps close friends and family. This suggests that associations between contact and policy/procedural issues in other areas might be tied in similar ways: attitudes about women or minorities in upper management will be tied to the quality of experiences with women and minority groups *in those roles*; attitudes about people with disabilities working in sales or service professions will be tied to experiences *of those people in those positions*. General contact in one's life has effects, of course, but the more specifically the contact is tied to the context, the more likely it is to change attitudes (and policy opinions) concerning that specific context. Of course, this raises a conundrum: if a group is systematically excluded from (or invisible in) a particular environment then possibilities for the most powerful form of contact with that group are inherently limited. This fact is vividly illustrated in the current data. The measures of contact with gay people in the military were all hedged with language such as “Do you currently serve with a Service member *you believe to be* homosexual?” (emphasis added). In making judgments about groups entering new spheres, the most influential type of contact may be the type of contact least available: direct and open contact with members of that group actually operating in that sphere (Clair, Beatty, & Maclean, 2005). The fact that the statistical effects are stronger for quality of contact (rather than quantity) within the context suggests that when opportunities for contact *do* occur, maximizing their potential for positive outcomes is crucial.

In an applied sense, these findings reemphasize the importance of indirect forms of contact that do not require the outgroup's physical presence. Media portrayals (Joyce & Harwood, 2014) and imagined contact (Crisp & Turner, 2009) can provide the experience of intergroup interaction when immediate personal contact is unlikely. Hypothetically, the U.S. audience could have been exposed to news coverage of gay people serving openly in other countries' militaries during the

DADT era (although it is not clear that such stories were told). Imagined contact between straight and gay Service members could also have provided a form of *in situ* contact. More broadly, where policy changes have implications for lifting group oppression and opening opportunities for disadvantaged groups in society, creativity is needed to develop positive orientations towards outgroup members operating in roles currently closed off to them. For example, pre-Obama there was no opportunity to actually observe a Black U.S. President, but it is not unreasonable to wonder whether a high profile portrayal such as Dennis Haysbert's President Palmer ("24") might have shifted attitudes towards acceptance of a Black person in that role. In some cases, the only route to the possibility of real contact may be via indirect forms of contact (Crisp & Turner, 2009; Harwood, 2010).

The interaction between quality and quantity of contact merits some discussion. While contact researchers commonly examine quality and quantity of contact (Voci & Hewstone, 2003; Prestwich, Kenworthy, Wilson, & Kwan-Tat, 2008), most have not examined interactions between the two. Of the small number that have, the interpretation tends to focus on the varying effects of quality at different levels of quantity. For example, Aberson and Haag (2007) show that quality is more important in predicting implicit attitudes when quantity is low (see also Asgari, Dasgupta, & Cote, 2010). The current data show that increasing quantity in the absence of quality results in policy-related responses that are less favorable towards the outgroup. The point has been made previously that poor quality contact is unlikely to be helpful to intergroup relations (Paolini, Harwood, & Rubin, 2011), and the current data provide evidence that the *quantity* of poor quality contact is straightforwardly and linearly related to negative outcomes.

Clearly the current data are limited. The measures are not perfect due to the use of secondary data, and the absence of key demographic indices means that important statistical controls could not be used. The data are also entirely self-report, and hence social desirability may be influencing responses. The attempt to remove gay respondents from the data was probably effective, but was also crude and resulted in the loss of large numbers of non-gay respondents as well. The sample size means that most effects in the data are significant; hence, effect size information is critical, but standard practices for reporting effect sizes in mediated models (particularly for the indirect effects) remain a little uncertain. The data are cross-sectional and inferences concerning causality are therefore inherently limited.

That said, the results here provide new insights on contact theory in the ways described earlier. Equally important, as discussed in the introduction, these findings are interesting because the data do not merely have the *potential* to influence policy; they actually *did* influence policy. The attitudes concerning repeal expressed in the survey were repeatedly cited in the U.S. Defense Department's decision to support repeal of DADT (Garamone, 2010). The current analysis demonstrates that Service members' contact with gay people, both outside and *particularly inside* the military, was significantly associated with those attitudes, and hence that contact was a meaningful force in determining a significant and controversial shift in U.S. public policy.



## NOTES

1. Full materials and original data for the project as obtained from the U.S. Department of Defense are available publicly at <https://osf.io/wki3y/>.
2. The data set, including the variables constructed for this analysis, is available publicly at <https://osf.io/wki3y/>.

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