

Reflections on the Statistical Analysis of Personality and Norms in War, Peace, and Prejudice: Are Deviant Minorities the Problem?

Winnifred R.Louis^a, Kenneth I.Mavor^b, Deborah J.Terry^a

^aUniversity of Queensland,

^bUniversity of Southern Queensland

Abstract

The compelling quality of the Global Change simulation study (Altemeyer, 2003), in which high RWA (right-wing authoritarianism)/high SDO (social dominance orientation) individuals produced poor outcomes for the planet, rests on the inference that the link between high RWA/SDO scores and disaster in the simulation can be generalized to real environmental and social situations. However, we argue that studies of the Person \times Situation interaction are biased to overestimate the role of the individual variability. When variables are operationalized, strongly normative items are excluded because they are skewed and kurtotic. This occurs both in the measurement of predictor constructs, such as RWA, and in the outcome constructs, such as prejudice and war. Analyses of normal linear statistics highlight personality variables such as RWA, which produce variance, and overlook the role of norms, which produce invariance. Where both normative and personality forces are operating, as in intergroup contexts, the linear analysis generates statistics for the sample that disproportionately reflect the behavior of the deviant, antinormative minority and direct attention away from the baseline, normative position. The implications of these findings for the link between high RWA and disaster are discussed.

It is fascinating to read about the simulated world futures run by individuals high in right-wing authoritarianism (high RWAs) and individuals high in both RWA and social dominance orientation (SDO) ("Double Highs")—fascinating, and intensely satisfying. According to Altemeyer (2003), (a) Double High RWA/SDO participants have strong, Machiavellian leadership motives; (b) because they are very strongly motivated to acquire power, they may be overrepresented among leaders, and particularly among conservative leaders; and (c) when in leadership positions, they wreak havoc on out-groups and fail to cooperate prosocially, even when faced by common and urgent threats, thereby jeopardizing and eroding in-group positions in the medium- and long-term. Speaking as left-wing academics, we find it particularly rewarding to have the depressing state of the modern world attributed to a psychologically distant out-group: right-wing politicians. But what does it mean to observe that high RWA/SDO minorities are forces for evil? Can world peace be created by screening politicians for low RWA/SDO scores?

Probably not, because social attitudes and behavior are powerfully shaped by social factors. *ASAP* readers indeed may be especially knowledgeable about the moderating effects of situations on personality–behavior relationships: the Person \times Situation interaction. Intergroup research suggests that even dispositional pacifists might lead nations to war under the influence of norms—standards or rules for appropriate behavior—that mandate situational competitiveness or hostility (e.g., Hogg & Turner, 1987; Terry & Hogg, 1996; regarding prejudice, see also Billig, 1976; Duckitt, 1983, 1989; Gaertner & Dovidio, 1986; Pettigrew, 1958). Indeed, salient social group norms have been specifically observed to moderate the link between prejudice and personality variables such as RWA and SDO (Reynolds, Turner, Haslam, & Ryan, 2001; Verkuyten & Hagendoorn, 1998).

Altemeyer's (2003) Global Change Game simulated individuals' evolving responses to environmental or social challenges and opportunities. Identifying the predictors of environmental or political or nuclear holocausts is an important task. However, if holocausts are understood as the outcomes of norms as well as of personality variables, the analysis of individual variability may not meet the challenge of predicting, explaining,

or preventing these outcomes. In the present article, it is argued that normative influence in social attitudes and behavior is systematically underestimated, undermining the explanatory and predictive power of the research. Three aspects of the problem are discussed: (a) a methodological strategy that selects for measures with "normal" variance will maximize the role of personality variables, privileging measures that tap unclear or weak norms; (b) an analytic strategy that reports normal linear statistics will highlight personality variables, which work to maximize variance, and overlook the role of norms, which work to produce invariance; and (c) where both normative and personality forces are operating, as in intergroup contexts, the linear analysis generates statistics for the sample that disproportionately reflect the behavior of the deviant, antinormative minority and direct attention away from the baseline, normative position. Study of the Person \times Situation interaction is obscured because the situation variables' range is systematically restricted and the asymmetric situational invariance is statistically and interpretatively invisible.

The Migrating Content of Constructs in Social Science

Methodological choices in social sciences direct attention away from normative effects when researchers throw out or avoid skewed dependent variables on the grounds that population social attitudes and behaviors should be normally distributed. Behaviors and attitudes endorsed or rejected at very high base rates are taken to be poor targets of study because of the artifactual ceiling or floor effects (see, e.g., Tabachnick & Fidell, 1996: pp. 71–78). However, the person variance for the dependent variable can be understood to be curvilinearly related to the strength of the situational norm. The stronger the norm, the less person variance there is to predict, because norms homogenize attitudes and behavior. That is, very normative measures will be low in variance because of ceiling effects and high base rates, whereas very antinormative measures will be low in variance because of floor effects and low base rates.

Regardless of personality, few Australians support genocide; most support religious pluralism. If we are interested in predicting social holocausts, the existence of this social consensus is important. Yet because there *is* a social consensus, these items are kurtotic and skewed. Therefore, methodological choices ensure that measures of the focal variables (e.g., prejudice) exclude the strong norms. With prejudice as a dependent variable, for example, with Black Australians as the target group, "Black Australians should be enslaved" might be excluded for floor effects; "Black Australians should be allowed to attend school with Whites" might be excluded for ceiling effects; and prejudice in 2003 may be operationalized as "Pro-Black affirmative action is reverse discrimination." The operationalization also changes over time, although the construct label is the same. Thus, aspects of prejudice on which individuals vary within the situation are included in the operationalization of the dependent variable, whereas the aspects of prejudice that are normative and homogeneous are systematically excluded.

Individual differences in independent variables such as RWA are also oriented, by definition, to items that tap the weak or contested norms of the present. These scale items also change across contexts and time under the same construct label: Across a single decade in the RWA scale, items such as "Women should always remember the promise they make in the marriage ceremony to obey their husbands" (Altemeyer, 1981) disappear, while new items such as "There is nothing wrong with premarital sexual intercourse" (reverse scored) (Altemeyer & Hunsberger, 1992) become defining features of authoritarianism. By "migrating" to avoid strong norms, constructs in social science maximize the variance available for individual-difference explanations. Of course, RWA is designed to be a measure of individual variability. Yet the normative historical and between-context differences (e.g., changing attitudes regarding the status of women) are of great social and theoretical importance. Used in the context of predicting or eliminating social problems, a "migrating variance" methodological strategy—throwing out normative independent or dependent measures of particular constructs as they become increasingly rejected or endorsed and thus more skewed—seems poorly positioned to understand historical stability and change.

Invisible Norms and the Analysis of Variance

Once the methodological choices have been made, statistical models also direct attention away from normative effects, because researchers learn to analyze variance rather than invariance. Personality produces individual differences—that is, variance, which is what the statistical packages look for and report. By contrast, because norms constrain attitudes and behavior, the stronger the norm, the *less* variance there is to predict. Yet there is no conventional analysis of invariance. Constants are rarely analyzed (and often unreported) in regression or ANOVA models; instead, differences are assessed without consideration of the baselines. Thus, the normative level—of prejudice, aggression, militance—is not addressed in the analysis. Moreover, although variance is a population parameter as meaningful as means or averages, in principle, in the linear model homogenous variance is generally assumed, whereas heterogeneous means are modeled and tested. We know of no statistical analysis that reports or tests for invariance across individuals: Tools search for and analyze the linear variance

and its predictors, and invariance is a null effect. Variance versus invariance for the same items across time or samples is similarly unaddressed. In short, normative effects become analytically invisible.

Asymmetric Correlations?: Deviant Minorities and Normative Majorities

In the final step of interpretation, individual differences are emphasized at the expense of norm-induced homogeneity if asymmetric relationships are interpreted as if they were symmetric. As is generally known, correlational relationships between normally distributed variables can be interpreted symmetrically: If effort and test scores are correlated, high scores reflect high effort, and low scores reflect low effort. However, the relationship of a normally distributed independent variable with a skewed dependent measure is asymmetrically driven by the outlying tail of the distribution. For example, if a test were extremely easy, effort might be unrelated to test score for the majority of the class who score at the ceiling. Yet a significant correlation would still be observed if the outliers who scored poorly also had low effort. In this case, the significant but asymmetric correlation should be interpreted with caution: Low scores reflect low effort, but high scores do not necessarily reflect high effort.

In the same way, the relationship between a normally distributed personality variable and a skewed attitudinal or behavioral social measure is more informative from deviance (the tail of the distribution) to personality than from conformity (the ceiling or floor) to personality. Despite this asymmetry, the learned assumption of normality may lead researchers to interpret linear tests as evidence of a general relationship. If personality-behavior variance is disproportionately driven by deviant minorities, in the context of a norm-behavior invariance that is analytically invisible but theoretically and socially important, the asymmetry of the effect must be articulated in order to accurately explain the behavior.

An Illustration: Norms, Skewness, and Personality-Behavior Effects in Two Australian Samples

Altemeyer and Hunsberger (1992) described correlations of .40 and .50 between RWA and "posse-radical" items in this way: "If you ask people whether they would be willing to help locate and arrest [social deviants] and then have them tortured or even executed, most subjects say 'absolutely not.' But high RWAs answer much more equivocally" (p. 115). From this analysis, it seems likely that although those who are equivocal about antinormative repression are higher in RWA, rejection of the repression does not require low RWA. Whereas deviance is associated with personality, the conformity of the normative majority is unaddressed. To further illustrate the implications of asymmetry, we describe existing data sets linking personality variables (RWA and SDO) to social variables (Australian pro-White attitudes and support for the exclusion of asylum seekers). We reanalyzed the data to provide the correlation between the social and personality variables for the whole sample, and for the majority or minority who displayed high and low levels of the dependent variable. Table 1 summarizes the results and presents some characteristics of each study; Figures 1 and 2 illustrate the asymmetric bivariate relationships.

Table 1. Predictive Relationship Between Personality and Social Attitude

| Study | Sample characteristics | Construct, scale # items, alpha | Social attitude | <i>r</i> (whole sample) | Majority vs. minority |
|--|---|---|--|----------------------------|--------------------------|
| Louis, Terry, & Gad-Harf (2003) | 121 White Australian students; median age 18; 37% men | RWA, Altemeyer (1988), 20, .86 | Disagree: The White race is the best race. | -.034*** | no variance vs. -.019 |
| Louis, Duck, Terry, Schuller, & Lalonde (2003) | 210 Australian voters; 4 weeks between SDO and attitude measures; median age 51; 49% women | SDO, Sidanius & Pratto (1999), 8, .79 | 3 semantic differential items re asylum seekers; alpha = .97 | .22** | .03 vs. .13 |

p* < .05. *p* < .01. ****p* < .001.

In each data set, significant associations were observed between the personality variables and the attitude. RWA predicts pro-White attitudes in one Australian sample; in the other, SDO predicts support for

exclusionary treatment of asylum seekers. But a closer examination of the data suggests the presence of two effects: one visible and one invisible. Visibly, the variance in attitudes is associated with personality variables. White Australians' disagreement that "the White race is the best race" was negatively correlated with RWA, $r = -.34$, $p = .000$ (see also Louis, Terry, & Gad-Harf, 2003). In another data set, Australian voters' support for programs to exclude refugee claimants or asylum seekers from Australia was significantly predicted by SDO, $r = .22$, $p = .001$ (see also Louis, Duck, Terry, Schuller, & Lalonde, 2003). Thus, personality variables produce significant and visible effects.

However, in both studies, scores on the social attitudes were skewed, thus reducing the variance for the majority of the sample. The pattern of results suggests that there was a clear normative position on the attitude under consideration. This effect is invisible in the analyses and must be inferred from the distribution's invariance (which would rarely be reported), unless between-group or cross-context data allow the norm to vary. Reference to Figure 1 suggests that although the minority of White Australian students who did not strongly disagree that "the White race is the best race" tended to be high in RWA, among a normative majority, RWA was less predictive of the social attitude. In fact, for the majority of the sample, the correlation cannot be calculated (72% disagree at ceiling), although among the 28% minority who did not strongly reject the statement, RWA and social attitudes correlate at -0.19 . In a similar vein, inspection of Figure 2 suggests that the minority of participants who did not support exclusionary measures for asylum seekers tended to be low in SDO, but among the normative majority, SDO was unrelated to the social attitude. The correlation between support for exclusion and SDO for the 74% majority of the sample who favored exclusionary measures was only $.03$, versus $.13$ for the 26% minority position with unfavorable views of exclusionary measures. Note that this asymmetry occurs even though in the latter study, the normative position was a right-wing (anti-asylum seeker) position.

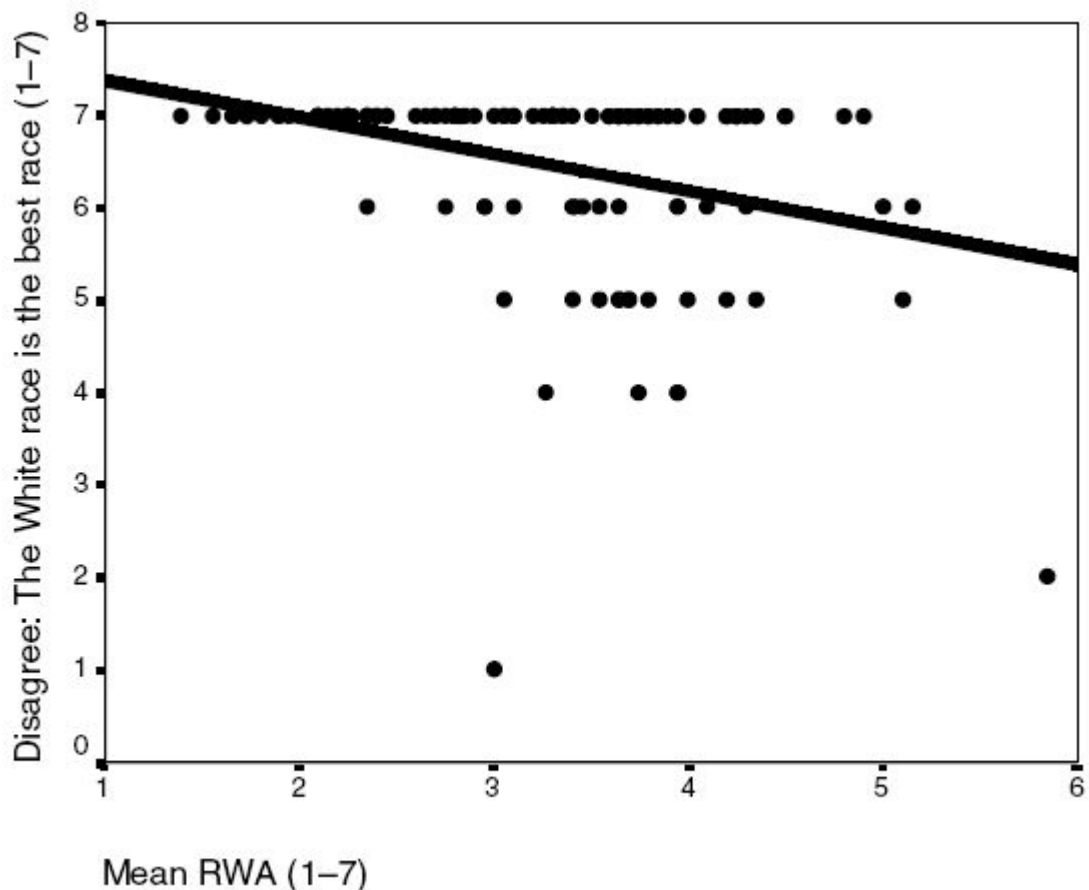


Fig. 1. Bivariate relationship between RWA and disagreement that "the White race is the best race."

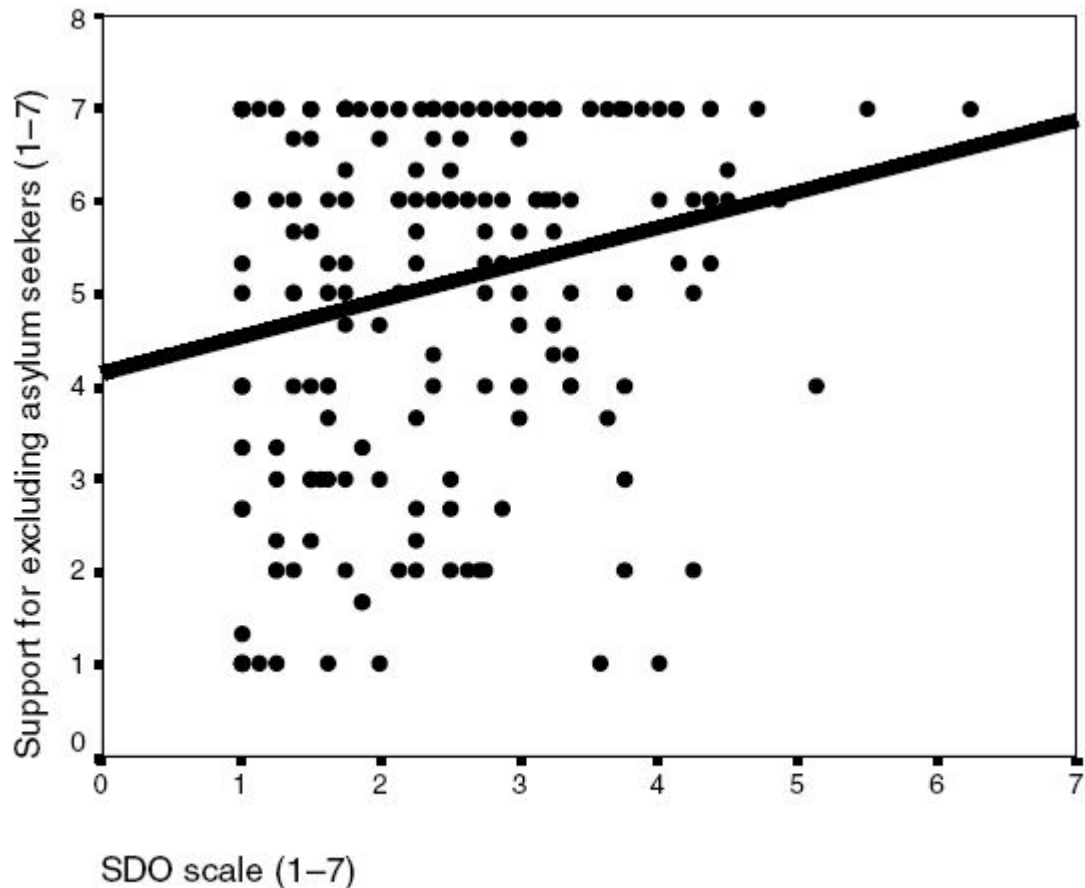


Fig. 2. Bivariate relationship between SDO and positive attitudes toward reducing the number of asylum seekers in Australia.

In the present data, then, antinormative racists were systematically higher in RWA, and antinormative liberals (with positive attitudes toward asylum seekers) were systematically lower in SDO. But among the normative low-prejudice majority for White Australians, RWA was unrelated to prejudice, and among the majority with normative negative attitudes toward asylum seekers, SDO was unrelated to support for exclusionary measures. Indeed, for the majority of participants in the first data set (72%) and a considerable proportion of participants in the second (30%), there was no variance to predict, presumably because of the presence of strong social norms constraining the attitudes under consideration.

It would be common for researchers to make a methodological decision to exclude items like the "White race" item from study, because they are too skewed. If the item were to be studied, conventional analyses will reflect the variance, leaving the invariance unaddressed. Moreover, in the interpretation of the result, the personality-behavior variance would usually be reported and interpreted symmetrically; the asymmetric nature of the effect (with the majority adopting a normative position) would rarely be discussed. The cumulative effect of these methodological and statistical practices, we argue, may be to systematically underestimate the effects of normative influence on important attitudinal and behavioral outcomes. The underlying Person \times Situation interaction is obscured because the situation variables' range has been restricted and the asymmetric situational invariance is statistically and interpretatively invisible.

What If Authoritarians Didn't Rule the World?

Personality research is a critical aspect of the study of social conflict and harmony. It is theoretically and socially important to note that conventionalism, submission, and aggression often covary, and that RWA and SDO predict prejudice against vulnerable minority groups within any given social structure. Dominant authoritarians in critical leadership positions may well wield disproportionate influence for evil; the specific illustration in Altemeyer (2003) is both provocative and compelling. However, the study leads us to consider the general question of whether predicting relative variance in millions of simulated dead with variance in attitudes to premarital sex could be complemented in other research with different types of designs or analyses. What kind of model would we develop if we tried to predict and understand real massacres and genocides? Non-

normally distributed low and high base-rate behaviors and attitudes are of great interest, and the processes that lead people to avoid or engage in these actions may not be the same processes that produce variance for the normally distributed, moderately endorsed midrange. What kind of Personality \times Situation story could we tell if we tried to understand the changing relationship between authoritarianism and belief in women's duty to obey their husbands? It seems likely that the strategy of avoiding skewed and invariant behavioral and attitudinal dependent variables will maximize the impact of individual-difference variables, without explaining or predicting normative influence across contexts, time, or behaviors.

Methodologically, norms that are at present invisible because of within-context, within-group studies might be introduced as moderating variables of personality-behavior relationships (e.g., Pettigrew, 1958; Terry, Hogg, & Blackwood, 2001). However, it is not clear that norms for many important societal outcomes (e.g., nuclear war) could be easily manipulated, and the problem of statistical tools focusing almost exclusively on linear variance remains. Statistically, perhaps nonlinear effects such as thresholds might be routinely included in social science models. In any case, statistically and theoretically articulating the relationship between normative invariance and asymmetric personality-behavior relationships will be a valuable complementary focus in our research. People trying to understand and predict nuclear, social, and environmental holocausts must search for alternatives to the linear model and the normal distribution.

Methodologically, statistically, and interpretatively, researchers should be self-conscious about a focus on variance and the assumption of symmetric effects. In the study of prejudice and war, analyses might yield a different pattern of results or more broad interpretations if they incorporated consideration of meaningful skewness or degrees of invariance. If high RWAs can disagree that "the White race is the best race," then the evil tendencies of authoritarians can be normatively constrained. And if low-dominance individuals can support exclusionary measures for asylum seekers, then maybe even if our leaders weren't authoritarian and domineering bigots, normative prejudice and conflict would persist. To understand the relationship between authoritarianism and global holocausts, the Person \times Situation interaction directs us to consider what attitudes and behaviors high and low RWAs have in common as well as how they differ.

References

- Altemeyer, B. (1981). *Right-wing authoritarianism*. Winnipeg, Manitoba, Canada: University of Manitoba Press
- Altemeyer, B. (1988). *Enemies of freedom: Understanding right-wing authoritarianism*. San Francisco, CA : Jossey-Bass Inc.
- Altemeyer, B. (2003). What happens when authoritarians inherit the earth? A simulation. *Analyses of Social Issues and Public Policy*, 3(1).
- Altemeyer, B., & Hunsberger, B. (1992). Authoritarianism, religious fundamentalism, quest, and prejudice. *The International Journal for the Psychology of Religion*, 2(2), 113–133.
- Billig, M. (1976). *Social psychology and intergroup relations*. London : Academic Press.
- Duckitt, J. (1983). Culture, class, personality, and authoritarianism among White South Africans. *Journal of Social Psychology*, 121(2), 191–199.
- Duckitt, J. (1989). Authoritarianism and group identification: A new view of an old construct. *Political Psychology*, 10(1), 63–84.
- Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. Dovidio & S. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 61–89). San Diego, CA : Academic Press.
- Hogg, M. A., & Turner, J. C. (1987). Intergroup behaviour, self-stereotyping, and the salience of social categories. *British Journal of Social Psychology*, 26, 325–340.
- Louis, W. R., Duck, J., Terry, D. J., Schuller, R., & Lalonde, R. (2003). *Why do citizens want to keep refugees out? Threats, fairness, and hostile norms in the treatment of asylum seekers*. Unpublished manuscript.
- Louis, W. R., Terry, D. J., & Gad-Harf, J. (2003). *Australian anti-Americanism and support for the "War on Terrorism"*. Manuscript in preparation.
- Pettigrew, T. F. (1958). Personality and sociocultural factors in intergroup attitudes: A cross-national comparison. *Journal of Conflict Resolution*, 2, 29–42.
- Reynolds, K. J., Turner, J. C., Haslam, S. A., and Ryan, M. K. (2001). The role of personality and group factors in explaining prejudice. *Journal of Experimental Social Psychology*, 37, 427–434.
- Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York : Cambridge University Press.
- Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). Northridge: Harper Collins.
- Terry, D. J., & Hogg, M. A. (1996). Group norms and the attitude-behavior relationship: A role for group identification. *Personality & Social Psychology Bulletin*, 22, 776–793.

- Terry, D. J., Hogg, M. A., & Blackwood, L. (2001). Prejudiced attitudes, group norms, and discriminatory behaviour. In M. Augoustinos & K. J. Reynolds (Eds.), *Understanding prejudice, racism, and social conflict* (pp. 140–155). London: Sage Publications.
- Verkuyten, M., & Hagoort, L. (1998). Prejudice and self-categorization: The variable role of authoritarianism and in-group stereotypes. *Personality and Social Psychology Bulletin*, 24, 99–110.