The Wakening of America: Tracking US Intolerances through the World Values Survey (1995-2014)

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Intolerance is broadly recognized as the refusal to permit, or even consider, opinions or beliefs contrary to our own. Despite millennial political progress and increased advocacy for minorities, intolerance still persists in explicit forms, such as travel bans, border walls, and restrictive abortion laws. To track changes of intolerance in the US, we analyzed four waves of data from the World Values Survey between 1995-2014. Intolerance toward minority groups was determined by binary logistic regression to be generally higher among older, male participants (43-100 years), however, in conjunction with our hypothesis relating to the Cohort theory, intolerance among this cohort decreased over the years. Younger participants (18-42 years) held relatively tolerant views, particularly of both unwed couples and people living with AIDS, but grew increasingly intolerant toward immigrants and foreign workers over the years. Directions for future research along with implications for America's management of intolerance are discussed.

Keywords: intolerance, minorities, United States, *World Values Survey*, cohort effect.

L'intolérance est reconnue comme le refus de considérer des opinions ou des croyances contraires aux nôtres. Malgré les progrès politiques millénaires et le plaidoyer accru en faveur des minorité, l'intolérance persiste encore sous des formes explicites. Pour suivre l'évolution de l'intolérance aux États-Unis, nous avons analysé quatre vagues de données issues du *World Values Survey* entre 1995 et 2014. L'intolérance envers les groupes minoritaires a été déterminée par régression logistique binaire comme étant généralement plus élevée chez les participants masculins plus âgés. Cependant, en conjonction avec notre hypothèse relative à la théorie de la cohorte, l'intolérance chez cette cohorte a diminué au fil des ans. Les jeunes participants avaient des opinions relativement tolérantes mais sont devenus de plus en plus intolérants envers les immigrants et les travailleurs étrangers au fil des ans. Les orientations pour les recherches futures ainsi que les implications pour la gestion américaine de l'intolérance sont discutées.

Mots-clés : intolérance, minorités, États-Unis, *World Values Survey*, effet de cohorte

The history of prejudice in the United States certainly pre-dates its nationhood. Clashes over race and religion have been evident since its inception, but suspicions over the decades have turned toward those belonging to minorities, such as immigrants, alcoholics, drug addicts, unwed couples living together, people living with AIDS, and members of the LGBTQ community. The American Heritage Stedman's Medical Dictionary defines intolerance as the general "unwillingness or refusal to tolerate or respect opinions or beliefs contrary to one's own" (American Heritage, 2002). In the context of the present study, intolerance extends to the aforementioned minority groups.

Explicit forms of intolerance at the expense of minority members have recently manifested as contentious travel bans for Muslims, a border wall with Mexico, and restrictive abortion laws (Amnesty International Ltd, 2018). Despite political and legislative progress in the millennial era, such as the inauguration of the first African American president, the legalization of gay marriage, along with human rights campaigns by Black Lives Matters members, the LGBTQ community and equal rights activists, the deep roots of racism, xenophobia, sexism, homophobia, and other forms of prejudice and discrimination still infect American society today (Rouse & Ross, 2018).

The sentiment of intolerance is reflected in a recent survey by the Pew Research Center, wherein 46% of American voters agree that life in America today is worse than fifty years ago and also that immigrants are a burden to the social fabric of the US (Fingerhut, 2018). The present study utilizes four waves of data from a large community database, known as the World Value Survey, to track and analyze changes of intolerance among gender and age cohorts in America in recent years. As an international research program

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created by political scientists, Ronald Inglehart and Christian Welzel, the World Values Survey (WVS) has dedicated past projects to the study of social, political, economic, religious, and cultural values throughout the world (Inglehart, 2014). Intolerance toward members of the aforementioned minority groups was measured on a dichotomous scale using survey answers by which respondents were prompted to mention any group of people they would not desire to have as neighbours. Given that each wave of collected data is independent of one another, the present study aims to detect differences in neighbourly intolerance relative to factors of sex, age, and wave.

Prejudice Across the Lifespan

Literature concerning intolerance often centers on intergroup contact, which constitutes the mixing of different types of people into an integrated society. Research shows that those with higher levels of intergroup contact (especially at young ages) are less prejudiced towards groups which are different than their own (Dovidio & Gaertner, 1999; Kite & Whitley, 2016). Unfortunately, past literature also suggests that when people are given the freedom of choice to spend time with members of an outgroup, they choose not to do so. One study in particular found that the modal time in minutes spent by both Catholic and Protestant communities was zero (Dixon et al., 2020). The literature has also consistently shown that older individuals exhibit higher traits of prejudice than younger individuals (Danigelis & Cutler, 1991; Dowd, 1980; Nosek et al., 2002; Wilson, 1996), which present as stereotyped beliefs and the tendency to discriminate against members of other groups.

However, explanations for the root of intolerance vary widely despite the unanimity of these conclusions. Some researchers have suggested that prejudiced personality (a term coined by Altemeyer to explain an intergroup phenomenon which negatively regards out-group members) (Altemeyer, 1988; 1996; 2007), hinges on a biologically inherited disposition; this might offer insight into why certain prejudices tend to travel through families (Buston & Emlen, 2003). Initial evidence for a genetic link for prejudice stems from Rushton's work on morning vs. night people (Rushton & Bons, 2005), which revealed that, although morning people are more alert during morning hours and night people during late hours, both are likely to give careful responses to controversial actions during their peak hours. Consider the challenge of slashing 10% out of the budget set aside by a university for designated student groups – which groups should receive less funding, and how much? When morning people were given this task late afternoon (and night people early morning), prejudicial behaviour emerged by cutting funding to

vulnerable minority groups. The challenge of course to this biological argument is best depicted in Emerald Isle, where Irish residents (Catholic and Protestant) share common genetic material, yet possess vastly different religious affiliations with violent implications.

Beyond one's inherited biological disposition, the current literature explicates intolerance in terms of environmental influence. For instance, bigoted settings, such as college fraternities which tend to tolerate or even facilitate the use of racist and sexist slurs, may foster bigoted attitudes and behaviour (Hesp & Brooks, 2009; Van Dyke & Tester, 2014). When discussing intolerance relative to environmental influence, some perspectives have identified cohort effects as the chief explanation for the generation of prejudice within wider socio-historical contexts (Dassonneville et al., 2012; Firebaugh & Davis, 1988; Nielsen, 2010; Poteat & Anderson, 2012). A cohort constitutes a group of people who grow up in the same region, belong to the same age group or endure the same historical events. Consequently, a cohort effect arises when similar perceptions or characteristics are adopted due to these shared socio-historical experiences. People who grew up during the Depression Era of the 1930s for instance, have shown to be more likely to save money, whereas those who experienced the recent COVID-19 pandemic will be more likely to stock supplies. A cohort of people may become collectively suspicious of foreigners following a national threat (e.g., September 11, 2001), or may share common attitudes on spanking and child-rearing given the typical style as they grew up. The Cohort theory then suggests that prejudice in later adult years is not a natural or inevitable fate of old age; rather, as we age, we may adopt collective views as result of a shared socio-historical experience from the earlier stages of our lives (Wilson, 1996).

Other researchers have argued that increased intolerance in older generations can be elucidated by diminished self-regulation, wherein older adults grow less capable of monitoring and guiding their public reaction to minorities (Gonsalkorale et al., 2009; Von Hippel et al., 2000). In the presence of out-group members, our primary response, as humans, is to perceive differences, whether that be through gender, race, age, social standing, etc. However, as humans, our secondary and more refined response, is to carefully choose our opinions and actions in the presence of these differences (Dovidio et al., 1997). Consider a colleague's request to be addressed using atypical pronouns – primary responses appear as automatic habits ('he' for males and 'she' for females), yet secondary responses are more deliberate attempts to exhibit behavior, which under most circumstances, are deemed more appropriate and

suitable ('zhe' or 'zher' for anyone). The Inhibitory Deficits Theory asserts that with age, our secondary responses grow less likely to be activated and we are prone to more primary (and often prejudiced) attitudes and behaviour. Deficits in inhibitory regulation can manifest as distractibility, abundant knowledge of irrelevant information, prolonged access to previously relevant information, and dependency on environmental cues (Hasher, 2015). This line of research ascribes patterns of impaired functioning, such as prejudiced behavior and opinions, in healthy older adults to decreased cognitive functioning which tends to occur with old age.

Gonsalkorale et al. (2009) have revisited The Cohort theory as a basis for intolerance, claiming that past research has been incomplete in its explanation of prejudicial attitudes across the lifespan. They assessed the implicit reaction times of over 15,000 respondents (aged 11-94 years) and found that older participants possess a stronger preference for white people as opposed to black people. Similarly to the Cohort Theory, which purports that prejudiced behaviors and attitudes arise from impaired secondary responses, Gonsalkorale et al. (2009) unveiled racial preference to be stronger with less implicit cognitive functioning (typified by older adults). In a similar fashion, Krendl et al. (2009) compared the executive functioning of both younger and older adults by monitoring reactions to being presented pictures during an MRI procedure. Younger adults were found to exhibit greater empathy based on heightened activity in the medial prefrontal cortex. Curiously, older adults who maintained unimpaired executive functions showed levels of emotion regulation in keeping with younger adults. The authors concluded that cognitive decline, which often accompanies old age, may contribute to prejudiced behaviour but that levels of intolerance were not directly correlated to age itself.

Whereas age has been widely studied in its relation to prejudice, researchers have also investigated the role of gender. Two sharply similar perspectives help to explain why males harbour more prejudices than females, namely the Male Warrior Hypothesis (Van Vugt, 2009), which is proceeded by the Social Dominance Theory (Sidanius & Prato, 1999). The latter suggests that the traditional patriarchal structure of most societies have traditionally socialized males to achieve more than females (Sidanius et al., 1994a; 1994b). The quest for status and power within the in-group stresses the need for competition and resource acquisition, which normative gender roles generally delegate to men. Particularly, in roles of leadership men tend to display suspicion and prejudice of outsiders as a mean to protect valued resources. Similarly, the Male Warrior Hypothesis suggests that men tend to exhibit more aggression and competitiveness with the intent of exerting reproductive dominance (Van Vugt, 2009; Van Vugt et al., 2007). Van Vugt's (2009) evolutionary perspective on male dominance suggests that male individuals learn to discriminate against out-group members as a result of a history of being threatened by out-group males competing for resources. Males are thus encouraged to participate in competition and socialized to view outsiders as challengers to those resources.

Various other studies have also supported these gender differences, one of which included a survey assessing racial attitudes on college campuses in the nineties; it revealed that females were more accepting than males of racial minorities, egalitarian roles and gay people (Qualls et al., 1992). *The Implicit Association Test* (IAT) from Harvard University, which aims to educate the public about hidden biases, also confirms that men generally possess more racial prejudices and prejudices toward gay people as opposed to their female peers (Nosek et al., 2007). Poteat & Anderson (2012) also attribute certain prejudices held by men to male socialization whereby men are pressured to exert heterosexual, masculine gender norms. Their study revealed that men tend to adopt homophobic views toward gay men rather than lesbians, whereas women do not (Poteat & Anderson, 2012). The same study also found great variability of intolerance in adolescent populations, identifying adolescence as a critical developmental period for which prejudiced attitudes often undergo significant changes.

Research Questions and Hypotheses

Much of the past literature has reflected the enduring socio-historical context of intolerance, prejudice, and discrimination which has permeated the United States and further revealed that intolerance rates are higher among older men. However, because we live in an age in which we strive as a society to meet intolerance with scrutiny, recent social forces have either legislated (through the Civil Rights and Americans with Disabilities Act) or publicly shamed (through social media) the outright expression of discrimination. The present study aims to trace changes in various intolerances across two decades (beginning in 1995-2014) through the measurement of these controversial social attitudes documented by the World Values Survey (Inglehart et al., 2014). The present study offers a unique opportunity to investigate the feasibility of cohort effects in an effort to explain higher levels of prejudice among older adults using the World Values Survey, an international survey of social and political attitudes dating back to 1980. Six waves of data exist to date, from which we selected the most recent four waves, spanning from

1994-2013. Exclusively among American respondents, we asked whether someone would be mentioned as an 'unwanted' neighbour in a list of 10 stigmatized groups. Since each sample is independent of the others, we can evaluate differences by age in neighbourly intolerance across the four waves. Presently, we aim to predict the relative level of intolerance toward members of nine different groups based on three factors: sex (male vs. female), age (younger: 18-42 years vs. older: 43-100 years) and wave (1995-1998, 1999-2004, 2005-2009, 2010-2014). We advanced the following three hypotheses:

H1: Based on the results of Nosek et al. (2002) and Wilson (1996) who found greater discrimination among older respondents, we hypothesized that older Americans would harbour greater intolerance for fictional neighbours from minority groups.

H2: Based on the results of Sidanius and Prato (1999) and Van Vugt (2009) who found greater discrimination among males, we hypothesized that male Americans would harbour greater intolerance for fictional neighbours from minority groups than female Americans.

H3: In addition to these two main effects, we expected (in support of Cohort Theory) an interaction between respondent age and wave of study. That is, intolerance differences would not be consistent across the four cross-sections of measurement.

Method

Datasets and Respondents

The World Values Survey (Inglehart et al., 2014) is a mass survey of over 200 items that addresses social and political attitudes. It is administered to respondents from roughly 80 countries several years apart. Although the WVS interviews respondents from several countries, we elected to analyze data from the US as the data concerning intolerance was readily available (whereas it was not available for other countries, such as Canada and across so many years). On account of its rigorous, high quality data collection, the WVS conducts interviews with upwards of 400,000 respondents. The primary method of data collection is in-person interviews hosted at respondents' residence. Answers to interview questions are either recorded by hand or by use of a computer. Written approval of the Scientific Advisory Committee must be granted for instances by which alternate data collection methods are conducted (e.g., phone interviews for participants in remote areas). Wave-1 (1980-1984) and Wave-2 (1990-1994) did not include the relevant measures for the current study and thus, were excluded. However, Waves 3-6 largely did, and were included in the present analysis.

The WVS requires a minimum sample size of 1200 participants to be included in any national dataset. All samples must be representative of the collective national population, regardless of nationality, citizenship or language, ranging from citizens between the ages of 18 and 85. The sample of American respondents (see Table 1) ranged in age from 18-100 years, and was approximately evenly divided for men and women in each wave of data collection: Wave-3 (766 males and 766 females), Wave-4 (508 males and 692 females), Wave-5 (525 males and 624 females), and Wave-6 (1084 males and 1148 females); total sample size was 6223 respondents. Whereas Table 2 offers a more detailed breakdown by each of wave, sex and age. Several variables were not included in all waves; specifically, religion, language, and unwed couples only appeared in Waves 5 and 6.

Additional demographic variables help to characterize the sample. With respect to marital status, the majority were married (54.4%), followed by single (19.2%), cohabiting (9.9%), divorced (9.6%), widowed (4.7%), and separated (2.3%). Most respondents were employed full time (42.2%), followed by those identified as retired (17.1%), those employed part-time (8.6%), homemakers (6.8), self-employed (5.1%), and students (4.6%); only 9.3% were unemployed. Finally, education attained was skewed toward a university or college degree (36.1%), some university or college education (19.7%), completed secondary (30.6%), incomplete secondary (11.2%), completed primary (1.5%), incomplete primary (0.5%), and finally no formal education (0.4%).

Survey Items on Intolerance

In addition to age and sex of respondents in each of four waves of data collection (1995-2014), we reviewed data from items measuring group intolerance, based on the following stem: *On this list are various groups of people. Please mention any that you would not like to have as neighbours* based on a dichotomous scale, where: 0 = *not mentioned* and 1 = *mentioned*. By this, higher percentages indicate greater intolerance to members of a given group, of which there were nine: drug addicts, heavy drinkers, gays/lesbians (though the term used in the survey was 'homosexuals'), immigrants and foreign workers, people who have AIDS, people who speak a different language, people of a different race, people of a different religion, and unmarried couples living together. Due to the broad nature of the WVS, many survey items of socio-economic and political importance were asked of respondents, however, only this particular survey item was pertinent to issue of intolerance.

Results

We set the significance level at .05 for all analyses, conducted using SPSS (version 25). We calculated a mean intolerance level as the average of the nine dependent variables. Since the average of all nine dichotomous variables ranged from 0 to 1, a percentage was derived.

A univariate analysis of variance, with mean intolerance as the dependent variable and each of sex (male, female), age (younger, older), and wave (1995-1998, 1999-2004, 2005-2009, 2010-2014) as the independent factors showed a significant main effect for sex, $F(1, 6198) = 8.81$, $p = .003$, $R^2 = .0014$; wherein males (30.2%) were more intolerant than females (28.9%); plus a significant main effect for age, $F(1, 6198) = 55.12$, $p < .001$, $R^2 = .0088$; wherein older Americans (30.7%) were more intolerant than younger Americans (28.2%). Finally, there was a significant main effect for wave, $F(3, 6198) = 93.56$, $p < .001$, $R^2 = .043$; Tukey's multiple comparison procedure showed that intolerance was greatest in 1995-1998 (35.0%), followed by 1999-2004 (31.7%), and then both 2005-2009 (27.1%) and 2010-2014 (25.9%), where the final two waves did not differ from each other. Both the sex by wave ($p = .807$) and age by wave ($p = .140$) interactions were not significant; however, the sex by age interaction was, $F(1, 6198) = 6.85$, $p = .009$, $R^2 = .0011$. Follow-up simple effects tests showed that whereas younger males and females showed comparable tolerance levels (28.3% and 28.1%, respectively), older males were significantly more intolerant than older females (32.0% and 29.6%, respectively); the 3-way interaction was not significant, $F(3, 6198) = 1.79$, $p = .147$. Because we observed modest deviations from normality, we calculated ranks (by wave) of intolerance percentages; since ranks do not conform to parametric constraints, it is considered a nonparametric alternative and not subject to derivational assumptions. Conclusions from this nonparametric rank analysis paralleled the previous findings.

Binary Logistic Regression

While the analysis of this composite intolerance variable is informative, it fails to realize the nature of specific intolerances that may behave uniquely, comparing for instance intolerance to drug addicts vs. immigrants. We pursue this question using a binary logistic regression. Given that our criterion variables (viz. whether a member of a given group was mentioned as an unwanted neighbour) were dichotomous, we tested the hypotheses using a binary logistic regression (Field, 2019). Typically, social science researchers hope to predict a continuous range of possible criterion scores (e.g., grade point average, adult height, life expectancy); but on less frequent

occasions, more absolute predictions (e.g., pregnancy, smoking, incarceration, suicide) are sought, as we propose presently. That is, a binary logistic regression analysis will ascertain the extent to which our three factors arrive at the correct conclusion that a given citizen mentions their discomfort with having a drug-user as their neighbour. Our three categorical factors include Wave (1995-1998, 1999-2004, 2005-2009, 2010-2014), and both respondent sex (male, female) and age (younger: 18-42 years, older: 43-100 years) as the predictor variables. Our analysis further permitted the testing of all 2-way and 3-way interactions. In the event of a significant main effect, we inspected the percentage differences for male vs. female, and for younger vs. older respondents; or utilized a 4-cell X^2 test if Wave (with four levels) was significant. In the event of a significant interaction, we conducted tests of association between the dependent measure and one predictor, at different levels of another predictor. Tables 3-11 offer a delineation of the main effects and interactions. Effects were entered as blocks and tested for their significance using Wald's X^2 test plus Nagelkerke's R^2 to assess proportion of explained variance. Finally, we used the Hosmer-Lemeshow Test to determine if a significant amount of unexplained variance remained in the error term, where a nonsignificant result ($p > .05$) would suggest a complete model.

For each individual effect (e.g., wave, or a sex by wave interaction), we provide an odds ratio, which is interpreted thusly: the likelihood that a respondent mentions a member of a designated group as an undesired neighbour is (a) unchanged with values of 1.0, increased with values above 1.0, and decreased with values below 1.0. For example, an odds ratio of 1.75 for respondent sex would suggest (upon inspection of the proportions) a 75% greater likelihood that males would list a neighbour of colour as undesirable. Alternatively, a ratio of .50 for respondent age would suggest a 50% reduced likelihood that younger respondents would mention a person living with AIDS as an undesirable neighbour.

AIDS. Results of our binary logistic regression (see Table 3) found significant main effects, Wald $X^2(3) = 74.26$, $p < .001$, $R^2 = .02$; specifically for all three predictors. Follow-up tests showed that males were 53% more likely than females (19.1% vs. 13.5%), and younger respondents were 27% less likely than older respondents (14.3% vs. 18.0%) to mention a person with AIDS among unwanted neighbours. Moreover, a comparison of cell percentages by the four waves showed the highest percentage of mention in years 1995-1998 (19.1%), followed by 1999-2004 and 2005-2009 (both 16.4%), and the lowest in 2010-2014 (13.9%). The block of 2-way interactions was significant, Wald $X^2(3) = 8.23$, $p = .041$, $R^2 = .022$; but

included only Age x Wave (see Figure 1). An analysis of association at each wave showed greater intolerance among older respondents for each of years 1995-1998, $X^2(1) = 5.38$, $p = .020$ (22.5% vs. 16.1%), 1999-2004, $X^2(1) = 6.62$, $p = .010$ (20.0% vs. 14.3%), and 2005-2009, $X^2(1) = 12.02$, $p = .020$ (19.9% vs. 12.6%). Alternatively, when split by age, the association test was significant for older respondents, $X^2(3) = 27.52$, $p < .001$; but not for younger respondents, $X^2(1) = 3.61$, $p = .306$. However, the age differences in 2010-2014 were not significant, $p = .978$ (13.9%); nor was the 3-way interaction, Wald $X^2(1) = .021$, $p = .886$.

Drug Addicts. Results (see Table 4) found significant main effects, Wald $X^2(3) = 132.26$, $p < .001$, $R^2 = .037$, specifically for both age and wave. Follow-up tests showed that younger respondents were 44% less likely than older respondents (80.8% vs. 88.8%) to mention a drug addict among unwanted neighbours. Moreover, a comparison of cell percentages by the four waves showed moderate levels in years 1995-1998 (82.6%) and 1999-2004 (74.0%), but later increased markedly in 2005-2009 (91.6%) and 2010-2014 (88.4%). The block of 2-way interactions was significant, Wald $X^2(3) = 10.58$, $p = .016$, $R^2 = .04$; but included only Age x Wave (see Figure 2). An analysis of association at each wave showed greater intolerance among older respondents for each of years 1999-2004, $X^2(1) = 11.33$, $p < .001$, $R^2 = .113$, (79.6% vs. 70.7%), 2005-2009, $X^2(1) = 12.17$, $p < .001$, $R^2 = .061$ (94.3% vs. 88.8%); and 2010-2014, $X^2(1) = 35.42$, $p < .001$, $R^2 = .177$ (94.3% vs. 88.8%); but not in 1995-1998, $p = .111$ (82.6%). The 3-way interaction was not significant, Wald $X^2(1) = .099$, $p = .753$.

Heavy Drinkers. Results (see Table 5) found significant main effects, Wald $X^2(3) = 88.52$, $p < .001$, $R^2 = .019$; specifically for all three predictors. Follow-up tests showed that males were 20% less likely than females (62.4% vs. 67.5%), and younger respondents were 27% less likely than older respondents (61.2% vs. 68.9%) to mention heavy drinkers among unwanted neighbours. Moreover, a comparison of cell percentages by the four waves showed moderate levels of mention in years 1995-1998 (62.0%) and 1999-2004 (56.6%), but later increased markedly in 2005-2009 (70.8%) and 2010-2014 (68.5%). Both the block of 2-way interactions, Wald $X^2(3) = 4.15$, $p = .160$; and the 3-way interaction, Wald $X^2(1) = .00$, $p = .969$; were not significant.

Immigrants and Foreign Workers. Results (see Table 6) found significant main effects, Wald $X^2(3) = 30.10$, $p < .001$, $R^2 = .01$; but only by wave. A comparison of cell percentages by the four waves showed a steady increase in mention from 1995-1998 (9.5%), to 1999-2004 (10.2%), 2005-2009 (13.7%), and 2010-2014 (14.1%). Both the block of 2-way interactions, Wald $X^2(3) = 3.31$, $p = .346$; and the 3-way interaction were not significant, Wald $X^2(1) = 1.61$, $p = .205$.

Language. Results (see Table 7) were not significant for the block of main effects, Wald $X^2(3) = 5.28$, $p = .152$; the block of 2-way interactions, Wald $X^2(3) = 5.16$, $p = .160$; or the 3-way interaction, Wald $X^2(1) = .00$, $p = .973$.

Gay/Lesbian. Results (see Table 8) found significant main effects, Wald $X^2(3) = 74.26$, $p < .001$, $R^2 = .03$; and for all three factors. Follow-up tests showed that males were 59% more likely to than females (28.9% vs. 20.4%), and younger respondents were 25% less likely than older respondents (22.2% vs. 26.8%) to mention Gays/Lesbians among unwanted neighbours. Moreover, a comparison of cell percentages by the four waves showed a saw-tooth pattern, highest in 1995-1998 (29.8%), dropping in 1999-2004 (22.9%), rising again in 2005-2009 (26.3%), and lowest in 2010-2014 (20.7%). Both the block of 2-way interactions, Wald $X^2(3) = 3.69$, $p = .296$; and the 3-way interaction were not significant, Wald $X^2(1) = .35$, $p = .712$.

Race. Results (see Table 9) found significant main effects, Wald $X^2(3) = 23.97$, $p < .001$, $R^2 = .011$; specifically for both sex and wave. Follow-up tests showed that males were 43% more likely than females to include people of colour among unwanted neighbours. Moreover, a comparison of cell percentages by the four waves showed higher than expected percentage of mention in years 1995-1998 (7.1%) and 1999-2004 (8.1%), and lower than expected percentage of mention in years 2005-2009 (3.9%) and 2010-2014 (5.2%). The block of 2-way interactions was significant, Wald $X^2(3) = 13.74$, $p < .001$, $R^2 = .02$; but included only Age x Wave (see Figure 3). An analysis of association at each wave showed greater racial intolerance among older respondents for 1995-1998, $X^2(1) = 5.38$, $p = .020$, $R^2 = .027$ (8.7% vs. 5.7%), but greater intolerance among younger respondents for 2010-2014, $X^2(1) = 6.58$, $p = .010$, $R^2 = .033$ (6.6% vs. 4.2%); there were no age differences in both 1999-2004, $p = .831$ (8.1%); and 2005-2009, $p = .570$ (3.9%). The 3-way interaction was not significant, Wald $X^2(1) = .09$, $p = .767$.

Religion. Results (see Table 10) found significant main effects, Wald $X^2(3) = 7.98$, $p = .046$, $R^2 = .01$; but only for Wave (included in only two waves); follow-up tests showed that the respondents in 2010-2014 (1.8%) were 75% less likely than the respondents in 2005-2009 (3.0%) to mention someone of a different religion among unwanted neighbours. Both the block of 2-way interactions, Wald $X^2(3) = 5.46$, $p = .141$; and the 3-way interaction were not significant, Wald $X^2(1) = .01$, $p = .930$.

Unmarried Couples. Results (see Table 11) found significant main effects, Wald $X^2(3) = 12.74$, $p = .005$, $R^2 = .01$; but only for age; follow-up tests showed that compared to older respondents (8.5%), younger respondents (5.6%) were 36% less likely to list unmarried couples among unwanted neighbours. Both the block of 2-way interactions, Wald $X^2(3) = 4.60$, $p = .204$; and the 3-way interaction were not significant, Wald $X^2(1) = 1.36$, $p = .712$.

Discussion

The present study evaluated the degree to which cohort effects explained age differences in Americans' intolerance to minority-group neighbours. By comparing the relative intolerance rate across 20 years, we enumerated the empirical support for cohort theory by testing the consistency of age differences across four waves of measurement. Analysis of the nine intolerance composite measures did reveal evidence which supported that males and older Americans harbour more intolerance toward minority-group neighbours. While the age by wave interaction was not significant, the sex by age interaction was, such that older males were more intolerant than each of older females, and younger males and females.

Results of the binary logistic regression analysis offered only partial support for cohort theory, wherein a significant age by wave interaction was identified for intolerances to neighbours on the basis of race, drug addiction, and people living with AIDS. However, this interaction was not significant for the six remaining intolerances, which included each of heavy drinkers, immigrants and foreign workers, gays and lesbians, unwed couples living together, and people of different language and religion.

A more in-depth analysis showed that the nature and interpretation of the age by wave interaction was unique to each intolerance. To begin, whereas older Americans were generally more intolerant to a neighbour living with AIDS, those differences were no longer significant in the final wave of data (2010-2014), as older Americans' tolerance levels matched those of younger Americans. However, the data told a different story concerning drug addicts. Whereas younger Americans were more tolerant overall, tolerance levels were matched with older Americans only in the initial wave of study (1994-1998). Still a markedly unique pattern was observed for race; whereas younger Americans were more racially tolerant in the first wave of study (1995-1998), they were significantly less tolerant in the last wave (2010-2014). We may conclude then, for both people living with AIDS and those from a different racial background, that older Americans have made considerable gains across the four waves of study.

Several general observations further warrant mention. Americans were especially intolerant regarding drug addicts (85%), followed closely by heavy drinkers (65%); they were more tolerant to gays and lesbians (24%), immigrants and foreign workers (12%), and people living with AIDS (16%). However, our analysis showed that these rates changed over time, and differentially by age. First, whereas younger Americans remained chiefly tolerant of people living with AIDS, older Americans sustained higher intolerance in the first three waves but exhibited comparable tolerance levels to younger Americans in the final year of assessment (2010-2014). However, a unique interaction was observed for race; whereas older American grew more tolerant to neighbours of a different race over time, younger Americans, who were more tolerant in 1995-1998, were significantly less tolerant in 2010-2014.

We can also compare our present findings to prior results in an effort to ground our study into the theoretical fabric. Specifically, we found well established differences by age (H1: older Americans were more intolerant than younger) supports Nosek et al.'s (2002) and Wilson's (1996) studies that also found greater discrimination among older respondents in the form of implicit preference for white people over black people. Significant differences by sex also supported the pre-existing literature of Sidanius and Prato (1999), and Van Vugt (2009) which informed our second hypothesis (H2: males will be more intolerant than females) in that traditional patriarchy largely shapes our construction and maintenance of gender-informed worldviews. Whereas we were unable in the context of the present sample to empirically evaluate the presence of diminished self-regulation (Gonsalkorale et al., 1999), we offer a unique contribution to the cohort effects literature by identifying those particular intolerances for which age differences were inconsistent over time (cf., Dassonneville et al., 2012; Nielsen, 2010; Poteat & Anderson, 2012).

Limitations and Future Research

The present study, while compelling in its conclusions, bears several limitations. To begin, the time period of study was only 20 years, which permitted a brief range of analysis. Future research should hope to incorporate a longer time period, and possibly aim to replicate these results using the upcoming Wave-7 (due for release in 2021). Arguably, a survey of Americans' intolerances would be interesting during the era of the Trump presidency.

We should also highlight, given the perils of self-report data, the potential for socially desirable responding, wherein people respond to questions under the occasional motive of self-promotion and

social desirability (a type of response bias which formulates in over-reporting of good behavior or what may be seen as socially accepted, and the under-reporting of bad or socially undesirable behaviors) (Kite & Whitley, 2016). Several techniques have been identified in social psychology to extract the influence of social desirability, including attitude-to-behaviour comparisons (Lamont & Swidler, 2014; LaPiere, 1934), physiological measures (Healy et al., 2015), or the incorporation of the bogus pipeline which uses fake polygraphs to incite participants to respond to questions truthfully (Alexander & Fisher, 2003).

Since the World Values Survey is a rather large battery of measures, it is possible to conduct smaller studies on more specific domains of group intolerance. For example, one might study intolerance toward the LGBTQ community at different points in history, whereby respondents may have lived through the Stone Wall Riots, the Feminist Movement, legalization of same-sex marriage, and other key events in history. A similar design could be carried out on intolerance toward race, religion, and people living with AIDS.

Although Canada was not included in all six waves of study, a Canada-US comparison would also prove interesting, being that both countries belong to North America but possess different social climates. Both countries appear in Wave-5 of the WVS, therefore updated data is readily available to be analyzed. Another limitation of the current study presented itself in our inability to determine the extent to which respondents of the survey had any contact with members of minority groups or if the respondents themselves identified as being a minority. Future research in the realm of intolerance should be observed through data that not only shows the presence of intolerance but allows for further investigation into its reasons for existing; survey items should pose questions that inquire about the motivations for implicit and explicit forms of prejudice, rather than simply asking respondents if they find certain minorities desirable as neighbors. It is important to acknowledge that nuances of intolerance exist and that they may be confounded or overlooked in the pre-existing literature. The issue of intolerance is often discussed in present society, but the scientific literature must realize the complex undertaking of not only unveiling its existence, but its root causes. For instance, in the present study we can only deduce that intolerant attitudes were present in older men from the WVS, but more rigorous survey items would allow future researchers richer data to connect to the theoretical framework of concepts such as the Cohort theory, the Male Warrior Hypothesis theory and the Inhibitory Deficits theory.

The discrepancy of intolerances across waves among younger generations also raises the concern that adolescents are particularly impressionable in this developmental stage and that programs could be implemented in school system to effectively educate and promote social tolerance. Such programs should be directed at encouraging out-group contact and facilitating discourse about implicit prejudice (e.g., students could be asked to complete free *Implicit Association Test* (IAT) found online as part of an assignment to observe their own biases and judgments).

Furthermore, it may be problematic to regard intolerance as a blanket term for all types of prejudice and discrimination. Although there is value in addressing intolerance as a concept on the whole, it is equally important to address the varied nuances and implications of individual intolerances, such as racial intolerance, gender intolerance, intolerance of sexual orientation, etc. For instance, an individual may tolerate a minority group in the public realm because they are aware of the ramifications for outright prejudice, however that same individual may hold prejudices toward a minority member if they are neighbours because it affects their personal life. Future studies should address the complexities of intolerance by compiling and utilizing datasets that offer grounds for a thorough examination of intolerance in all of its insidious forms.

Although archival data from the WVS is useful in observing trends, it is equally important to document the direct experiences of minority group members themselves. More intimate research designs should prove more fruitful in providing solutions for addressing intolerance, especially from the vantage of those directly affected. A more empathetic approach also has direct implications for the efficacy of clinical interventions, in instances where the client is a minority group member or where the issue of intolerance is being discussed in therapy settings.

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Appendix

Table 1

Sample Distribution by Wave, Sex, and Age ($N = 6223$)

Wave	Males ($N = 2983$)		Females ($N = 3240$)	
	Young	Older	Young	Older
	(18-42 yrs)	(43-100 yrs)	(18-42 yrs)	(43-100 yrs)
1995-1998	403	363	406	370
1999-2004	328	180	427	265
2005-2009	287	338	314	310
2010-2014	470	614	486	662
TOTALS:	1488	1495	1633	1607

Table 2

Descriptive Statistics (Percent Mentioned, Sample Size) by Sex, Age, and Wave

	1994-1998				1999-2004				2005-2009				2010-2014			
	Male		Female		Male		Female		Male		Female		Male		Female	
Mesure	Yng	Old	Yng	Old	Yng	Old	Yng	Old	Yng	Old	Yng	Old	Yng	Old	Yng	Old
Sample Size	403	363	406	370	328	180	427	265	287	338	314	310	470	614	488	662
AIDS	19%	25%	14%	21%	14%	29%	15%	14%	15%	24%	11%	15%	17%	17%	11%	13%
Drug Addict	80%	84%	82%	84%	67%	82%	74%	78%	85%	94%	92%	95%	84%	92%	84%	92%
Gay/Lesbian	30%	40%	22%	28%	26%	31%	20%	18%	24%	36%	19%	25%	22%	26%	16%	18%
Heavy Drinker	55%	60%	64%	69%	51%	56%	58%	62%	65%	70%	71%	77%	58%	60%	64%	71%
Immigrant	8%	12%	7%	11%	9%	9%	12%	9%	14%	14%	13%	13%	14%	16%	11%	15%
Language	-----	-----	-----	-----	-----	-----	-----	-----	11%	11%	11%	12%	14%	15%	12%	11%
Race	7%	12%	4%	6%	7%	8%	9%	8%	5%	4%	4%	3%	8%	6%	6%	3%
Religion	-----	-----	-----	-----	-----	-----	-----	-----	3%	1%	3%	1%	3%	3%	4%	2%
Unwell couple	-----	-----	-----	-----	-----	-----	-----	-----	5%	11%	5%	10%	6%	7%	6%	8%

Table 3

Binary Logistic Regression for Sex, Age, and Wave: AIDS

Intolerance: AIDS

Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	74.26 (3) < .001		74.26 (3) < .001	.020	14.12 (8) .079
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	.423	.070	36.77 (1) < .001	1.53	
Age	.310	.070	19.61 (1) < .001	.733	
Wave	-.134	.029	21.68 (1) < .001	.334	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	8.23 (3) .041		82.49 (6) < .001	.022	6.49 (7) .607
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	-.189	.140	1.82 (1) .178	0.828	
Sex x Wave	.070	.058	1.45 (1) .228	1.072	
Age x Wave	.129	.058	4.95 (1) .026	1.138	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	.021 (1) .886		82.51 (7) < .001	.022	6.39 (7) .603
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	.017	.117	.021 (1) .786	1.017	

Note. Hosmer Lemeshow Test.

Table 4

Binary Logistic Regression for Sex, Age, and Wave: Drug Addicts

Intolerance: Drug Addicts

Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	132.28 (3) <.001		132.28 (3) <.001	.037	75.12 (6) <.001
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	-.086	.071	1.43 (1) .231	0.918	
Age	-.580	.073	62.49 (1) < .001	0.560	
Wave	.220	.030	54.10 (1) < .001	1.246	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	10.58 (3) .016		142.54 (6) < .001	.040	39.19 (8) <.001
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	-.233	.147	2.53 (1) .112	0.792	
Sex x Wave	-.012	.060	0.40 (1) .844	0.988	
Age x Wave	-.167	.061	7.56 (1) .006	0.846	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	099 (1) .753		142.64 (7) < .001	.040	37.09 (8) <.001
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	.038	.121	.099 (1) .753	1.039	

Note. Hosmer Lemeshow Test.

Table 5

Binary Logistic Regression for Sex, Age, and Wave: Heavy Drinkers

Intolerance: Heavy Drinkers

Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	88.52 (3) <.001		88.52 (3) <.001	.019	21.17 (7) .004
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	-.229	.054	18.23 (1) .001	0.795	
Age	-.315	.054	34.18 (1) < .001	0.730	
Wave	.122	.022	29.58 (1) < .001	1.130	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	4.15 (3) .160		90.67 (6) .107	.020	21.97 (8) .005
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	.011	.108	.011 (1) .918	0.970	
Sex x Wave	.074	.045	2.73 (1) .098	1.002	
Age x Wave	-.053	.045	1.41 (1) .235	1.002	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	.002 (1) .969		92.67 (7) < .001	.020	21.94 (8) .005
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	.003	.090	.002 (1) .969	1.003	

Note. Hosmer Lemeshow Test.

Table 6

Binary Logistic Regression for Sex, Age, and Wave: Immigrants and Foreign Workers

Intolerance: Immigrants and Foreign Workers

Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	30.10 (3) < .001		30.10 (3) < .001	.009	5.74 (8) .676
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	.100	.078	1.65 (1) .199	1.105	
Age	-.181	.079	5.29 (1) .021	0.835	
Wave	.151	.034	20.20 (1) < .001	0.700	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	3.31 (3) .346		33.42 (6) < .001	.010	10.29 (8) .245
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	.003	.158	.000 (1) .983	1.003	
Sex x Wave	.017	.067	.061 (1) .804	1.017	
Age x Wave	.001	.001	3.25 (1) .071	1.001	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	1.61 (1) .205		35.02 (7) < .001	.011	11.73 (8) .164
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	.123	.097	1.61 (1) .205	1.131	

Note. Hosmer Lemeshow Test.

Table 7

Binary Logistic Regression for Sex, Age, and Wave: Language

Intolerance: Language

Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	5.28 (3) .152		5.28 (3) .152	.003	2.98 (6) .812
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	.201	.104	3.76 (1) .052	1.223	
Age	.025	.104	.057 (1) .812	1.025	
Wave	.137	.110	1.55 (1) .214	1.146	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	5.16 (3) .160		10.45 (6) .107	.006	5.76 (8) .674
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	-.030	.209	.021 (1) .885	0.970	
Sex x Wave	.342	.220	2.42 (1) .120	1.002	
Age x Wave	.002	.001	2.73 (1) .098	1.002	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	.001 (1) .973		10.45 (7) < .165	.006	4.90 (8) .768
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	-.011	.310	.001 (1) .973	.989	

Note. Hosmer Lemeshow Test.

Table 8

Binary Logistic Regression for Sex, Age, and Wave: Gay/Lesbian

Intolerance: Gay/Lesbian

Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	115.93 (3) <.001		115.93 (3) <.001	.028	6.27 (8) .617
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	.465	.060	60.56 (1) < .001	1.592	
Age	-.287	.060	22.79 (1) < .001	0.751	
Wave	-.154	.025	38.44 (1) < .001	0.857	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	3.69 (3) .296		119.62 (6) <.001	.028	6.78 (8) .561
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	-.197	.120	2.67 (1) .102	0.822	
Sex x Wave	-.026	.050	0.28 (1) .597	0.974	
Age x Wave	.048	.050	0.94 (1) .331	1.050	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	.352 (1) .712		119.97 (7) < .001	.028	4.53 (8) .806
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	.059	.100	.352 (1) .553	1.061	

Note. Hosmer Lemeshow Test

.

Table 9

Binary Logistic Regression for Sex, Age, and Wave: Race

Intolerance: Race

Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	23.97 (3) < .001		23.97 (3) < .001	.011	25.92 (8) .001
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	.361	.108	11.14 (1) <.001	1.43	
Age	.079	.108	0.54 (1) .463	1.08	
Wave	-.150	.045	11.74 (1) .001	.858	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	13.74 (3) .003		37.71 (6) < .001	.017	6.49 (7) .483
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	-.384	.218	3.10 (1) .078	0.68	
Sex x Wave	.015	.090	.027 (1) .869	1.02	
Age x Wave	.293	.089	10.7 (1) .001	1.34	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	.088 (1) .767		37.80 (7) < .001	.017	7.11 (7) .418
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	.053	.181	.088 (1) .767	1.06	

Note. Hosmer Lemeshow Test.

Table 10

Binary Logistic Regression for Sex, Age, and Wave: Religion

Intolerance: Religion

Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	7.98 (3) .046		7.98 (3) .046	.011	5.48 (6) .483
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	-.073	.215	0.12 (1) .735	0.930	
Age	.359	.216	2.77 (1) .096	1.432	
Wave	.557	.249	5.01 (1) .025	1.745	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	3.69 (3) .296		13.45 (6) .036	.018	0.01 (6) 1.00
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	-.960	.444	4.67 (1) .031	0.383	
Sex x Wave	.332	.520	0.41 (1) .523	1.394	
Age x Wave	-.053	.520	0.01 (1) .919	0.948	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	.008 (1) .930		13.46 (7) .062	.018	0.00 (6) 1.00
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	-.091	1.04	.008 (1) .930	0.913	

Note. Hosmer Lemeshow Test.

Table 11

Binary Logistic Regression for Sex, Age, and Wave: Unmarried Couples

Intolerance: Unmarried Couples

| Step	Block Fit		Model Fit	Nagelkerke	Hosmer*
1. Main Effects	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	12.74 (3) .00		12.74 (3) .005	.009	4.71 (6) .582
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex	.012	.132	0.01 (1) .927	1.012	
Age	-.455	.138	10.45 (1) .001	.634	
Wave	-.184	.135	1.86 (1) .173	.832	
2-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	4.60 (3) .204		17.34 (6) .008	.012	.14 (6) 1.00
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age	.044	.276	0.03 (1) .872	1.045	
Sex x Wave	-.218	.272	0.65 (1) .421	0.804	
Age x Wave	.561	.286	3.84 (1) .049	1.752	
3-Way Interactions	Wald X^2 (df) p		Wald X^2 (df) p	R^2	X^2 (df) p
	.136 (1) .712		17.48 (7) .015	.012	0.00 (6) 1.00
	B	SE_B	Wald X^2 (df) p	Odds Ratio	
Sex x Age x Wave	.211	.572	.136 (1) .712	1.235	

Note. Hosmer Lemeshow Test.

Figure 1

Age by Wave Interaction: Neighbours Living with AIDS
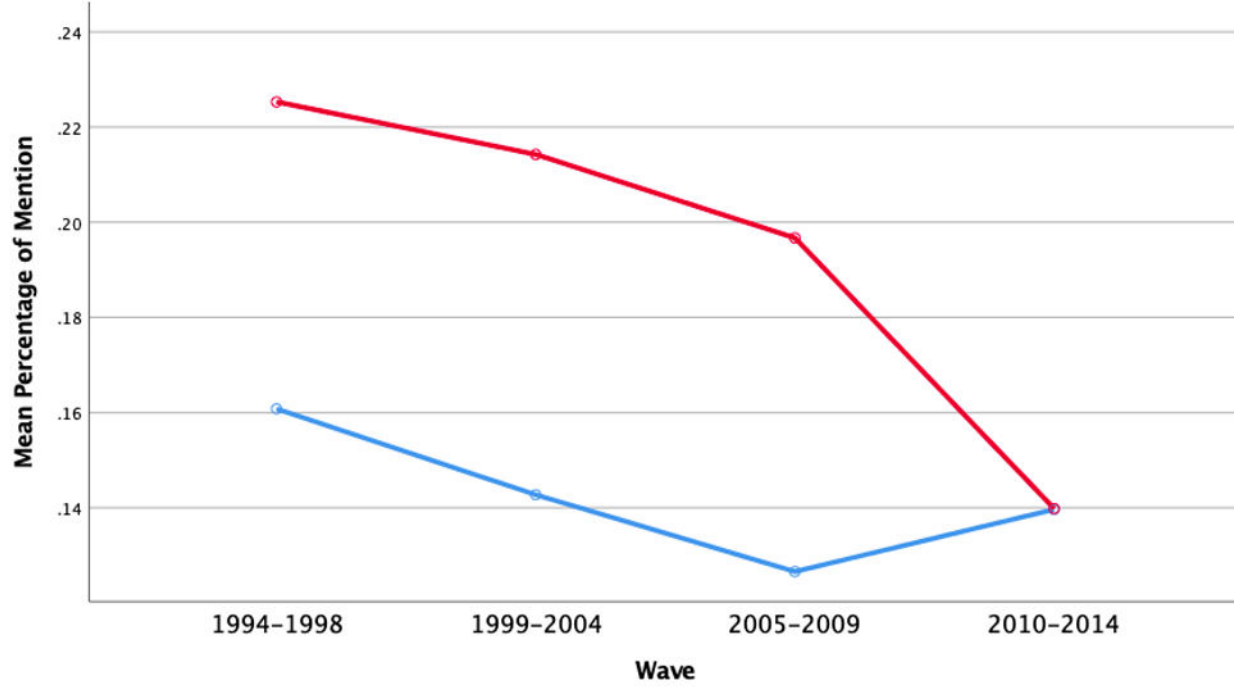
Figure 2

Age by Wave Interaction: Drug Addicts