Immigration, Ethnicity, and Neighborhood Violence: Considering Both Concentration and Diversity Effects

IMMIGRATION, ETHNICITY AND NEIGHBORHOOD VIOLENCE: CONSIDERING BOTH CONCENTRATION AND DIVERSITY EFFECTS

MICHELLE SYDES

School of Social Science, University of Queensland

ABSTRACT

Immigrant ethnicity remains a largely understudied aspect of the immigration-crime nexus. Instead, most research to date relies on a single measure of immigrant concentration – most commonly the percent foreign born, the percent recently arrived or the percent Latino/Hispanic. In doing so, studies fail to account for the potential heterogeneity within the immigrant population. This study provides a comprehensive examination of immigrant ethnicity by disaggregating the immigrant population by language as well as religious affiliation. Drawing on three waves of census data and nine years of official recorded crime data, this study explores the impact of both immigrant concentration and diversity on violent crime across 882 neighborhoods located in two Australian cities. The results demonstrate that growth in the immigrant population – regardless of the language or religion group under consideration - does not lead to more violent crime within a neighborhood. Further, no language or religion group concentration is associated with more violent crime once the socio-structural and environmental features of neighborhoods are considered. Indeed, the growth and concentration of some ethnic groups is linked to less violent crime. However, both linguistically and religiously diverse neighborhoods encounter more violent crime.

Introduction

In launching his bid for presidency in 2015, Donald Trump explicitly albeit erroneously linked Mexican immigrants to crime and throughout his campaign, repeatedly referred to "illegal immigrants" as violent criminals and drug lords (Martin, 2017). Similar divisive rhetoric has been echoed across the United Kingdom, Europe and Australia. For example, ex UKIP leader Nigel Farage attributed an increase in sexual crimes in Sweden to the admittance of Syrian refugees. Farage went on to declare Malmo "the rape capital of Europe, possibly the world" (BBC News, 2017). In the Netherlands, populist far-right politician Geert Wilders openly and unapologetically labelled Moroccan residents as "scum who make the streets unsafe" (McKie, 2017). In Germany, the former leader of the Alternative for Deutschland, Frauke Petry, effectively criminalized Syrian refugees by proposing border guards turn their guns on migrants who cross the country's borders illegally (Connolly, 2016). While in Australia, conservative senator Pauline Hanson used her maiden address to parliament to warn that "antisocial behavior is rampant" amongst Muslims and is "fueled by hyper-masculine and misogynist culture" (Commonwealth of Australia, Senate, 2016, p. 939). Together these sentiments suggest that (regardless of context) anti-immigrant attitudes are not ethnically neutral with certain groups more likely to be associated with social problems like crime than others.

Contrary to popular belief, empirical studies find little support to justify these concerns. In fact, scholars consistently find that once appropriate controls are considered, neither first nor second generation immigrants are more crime prone than their native born counterparts (Butcher & Piehl, 1998; Butcher & Piehl, 2007; Hagan & Palloni, 1999; Rumbaut et al., 2006; Sampson, 2008). Further still, a recent systematic review and meta-analysis of United States based immigration-crime research concluded that immigration is not linked to greater crime at the neighborhood or city level (Ousey and Kubrin, 2018). Reviewing the results from over 50 studies, Ousey and Kubrin (2018)

found that overall immigration was negatively related to crime - although the association was fairly weak.

Yet despite the plethora of research interested in the immigration-crime link, very few studies closely examine the particularities of immigrant ethnicity or the effect of ethnic diversity. Most research to date relies on a single measure of immigrant concentration – most commonly the percent foreign born/ recently arrived in an area (Feldmeyer and Steffensmeir, 2009; Lee et al., 2001; Martinez et al., 2008; Martinez, Stowell and Lee, 2010; Wadsworth, 2010) or the percent Latino/Hispanic (Feldmeyer, 2009; Harris & Feldmeyer, 2013; Light, 2017). Alternatively, some studies construct an immigration index by combining several measures into one (for example, percent foreign born, percent Latino and percent linguistically isolated) (Ousey and Kubrin, 2009). Problematically, this approach fails to recognize the potential heterogeneity within the immigrant population and may wash out important differences between groups (see for exception Kubrin, Hipp & Kim, 2016). Further, the focus thus far has been on measures of concentration rather than diversity. Only a handful of immigration-crime studies consider how the mixture of ethnic groups within a given community impacts crime (see for exception Feldmeyer, Harris & Lai, 2016; Graif & Sampson, 2006).

Drawing on three waves of Australian Bureau of Statistics (ABS) census data and nine years of official, recorded crime incident data, this article explores the immigration- crime relationship across 882 neighborhoods located in two Australian cities: Sydney – an established immigrant gateway and Brisbane – a new destination site. Recognizing that immigrant ethnicity underpins both the social disorganization and revitalization perspectives – this study simultaneously considers both concentration and diversity effects by disaggregating the immigrant population by two key measures of ethnicity – language other than English spoken at home and religious affiliation. By utilizing a hybrid modelling approach, I consider the effect of increasing ethnic group concentration and diversity on violent crime *within* a given neighborhood over time in addition to examining the impact

of ethnic group concentration and diversity on violent crime when comparing *across* neighborhoods.

Literature Review

There are a number of reasons to believe that the immigration-crime relationship may not generalize to all ethnic groups. Firstly, anti-immigrant attitudes are not ethnically neutral. Australian research suggests that invisible migratory groups (e.g. persons from the United Kingdom and New Zealand) experience low levels of anti-immigrant sentiment (3% of survey respondents expressed negative views) compared to those from Arab countries (25% of participants responded negatively) (Markus, 2013). Such negative attitudes could impede the successful integration of certain groups and have implications for crime at the neighborhood level. Secondly, motivations for immigration vary - some migrate with the hope to secure better opportunities and achieve upward social mobility, while others are forced to migrate as a consequence of conflict/humanitarian crises. At the aggregate level, immigrants arriving under these different circumstances may differentially impact neighborhood structures in ways that either promote or inhibit crime (Sampson, 2008). Thirdly, differences in cultural traditions may impact how new immigrants interact and form social ties with established co-ethnics in their neighborhood (Kubrin, Hipp & Kim, 2016). The quality of these social ties may determine the strength of informal social control mechanisms. Finally, immigrants speak a variety of different languages. For some groups (such as Spanish speakers in the United States), they are able to effectively communicate with other immigrants from a number of different countries. For others, language may create a communication barrier between natives and other immigrant residents which in turn impacts social interaction and weakens a community's regulatory capacity (Kubrin, Hipp & Kim, 2016).

Revitalization, Concentration and Immigrant Ethnicity

According to the revitalization thesis, immigrants from the same cultural and linguistic background can provide new arrivals with essential resources and ties that assist with integration

processes (Martinez & Lee, 2000; Martinez et al., 2004; Martinez et al., 2010; Nielsen, Lee & Martinez, 2005). With this in mind, the effect of immigrant concentration on crime is predicted to vary across ethnic groups depending on the size of the established co-ethnic population. An influx of a relatively new ethnic group may be linked to an increase in neighborhood crime in the short term until the co-ethnic population reaches a size where these resources and ties are established (Martinez et al., 2004).

In one of the most comprehensive studies to date, Kubrin, Hipp and Kim (2016) tested whether the protective effects of immigration on crime apply to all ethnic groups. In their cross-sectional analysis of property and violent crime across census tracts in Southern California, the authors took four different approaches to measuring immigration. These included: (1) a total immigrant concentration measure (percent foreign born); (2) disaggregated measures of the immigrant population by race/ethnicity; (3) disaggregated measures of the immigrant population by region of origin and; (4) cluster measures of spatially co-located immigrant groups. In the initial stages of modelling, they found that while their total immigrant concentration measure was not significantly associated with violent crime, it was related to lower levels of property crime. However, they found considerable variability in these relationships once the total immigrant concentration measure was disaggregated.

When considering ethnic/racial categorizations, they found that neighborhoods with 10% more Latinos experienced 7.1% more violent crime while neighborhoods with 1% more black immigrants encountered 4.7% less violent crime. Although the presence of Asian immigrants did not statistically impact violent crime, it did effect property crime. Neighborhoods with 10% more Asian immigrants reported 7.4% less property crime. Similar variability was found when disaggregating the immigrant population by region of birth. Of the 18 regions tested, they found four groups (West Africans, North Americans, North Africans and South Asians) were negatively associated with

violent crime while three groups (Western Europeans, Eastern Europeans and Central Americans) were positively linked to violent crime. In terms of property crime, they found negative associations for three groups (West Africans, East Asians and Southeast Asians) but positive relationships for two groups (Southern Europeans and immigrants from the Caribbean). They again uncovered important group differences for the cluster variables. While neighborhoods with more immigrants from the Chinese group encountered less violent crime, neighborhoods with more immigrants from three other group clusters (Mexico, Jewish and Central American asylum seekers) recorded more violence. Moreover neighborhoods with more immigrants from the Chinese or Central American asylum seeker group reported fewer property crimes whereas neighborhoods with more immigrants belonging to the New World[i] group faced higher property crime. Together, these divergent findings highlight the importance of considering the group specific effects of immigrant concentration on neighborhood crime.

Disorganization and Ethnicity Diversity

In their landmark study, Shaw and McKay (1942) argued that certain structural features, namely disadvantage, ethnic heterogeneity and residential instability, were related to higher rates of juvenile delinquency in Chicago neighborhoods. In poor, ethnically diverse and residentially unstable neighborhoods, developing strong social ties is particularly difficult (Stowell, 2007). Subsequently these structural features erode the social networks necessary to prevent crime thereby limiting a community's regulatory capacity (Sampson & Groves, 1989). Thus, one of the key arguments underpinning the social disorganization perspective of the immigration-crime link is that the increasing ethnic diversity caused by immigration makes it difficult for residents to come together to collectively solve community problems like crime.

Within this framework it can be assumed that language diversity is particularly detrimental to a community's regulatory capacity. If residents are unable to communicate with one another in a common language, they are less likely to interact with other residents which in turn weakens social

ties and informal social control. As a result, crime flourishes. As Feldmeyer and colleagues (2016, p. 271) explain heterogeneity "may contribute to a sense of social isolation among residents and a tendency for people to "hunker down" in their figurative "shells" in ways that decouple linguistically diverse communities from the social capital and normative constraints that reduce crime and violence." Yet despite reasons to believe immigrant concentration and diversity may differentially impact the neighborhood social processes important for the regulation of crime, few immigration-crime studies compare these two effects (see for exception Feldmeyer et al., 2016) – especially beyond the United States context (see for exception Sydes, 2017).

In their analysis of 2,858 census places across the United States, Feldmeyer and colleagues (2016) assessed the effects of language heterogeneity and Spanish language concentration on violence. Here they found, in line with previous research, that Spanish-language concentration was negatively associated with homicide, robbery and index violence (the sum of homicide, rape, robbery, and aggravated assaults). Therefore, places with more Spanish speakers encountered fewer violent crimes, net of other place-based characteristics. These findings support the revitalization perspective. However, they found the opposite effect in linguistically diverse census places. In more linguistically diverse census places, rates of homicide and robbery were higher - even after accounting for other macro-level factors associated with crime. Index violence did not reach statistical significance. These findings provide support for the social disorganization perspective. Together, these studies highlight the need to consider both concentration and diversity effects in immigration-crime research.

Measuring Ethnicity

Ethnicity is a multi-dimensional construct and can be measured using a variety of indicators. To capture the ethnic profile of residents, a number of questions related to country of birth, ancestry, language and religion are included in the Australian census (however unlike the United States, no data are collected related to race or skin color). In this study, I focus on two aspects of immigrant

ethnicity - language and religion. Unlike country of birth or ancestry, both language and religion involve some level of active participation. Additionally, research finds that language and religion are both powerful signifiers of social and cultural difference, and a strong driver of fear – particularly in the case of religion (Markus et al., 2009; Wickes et al., 2013). Scholarship from the United States suggests the concentration of immigrants who speak the same language can help create 'little worlds' and foster a sense of home for immigrants struggling with feelings of disorientation and displacement. Such places encourage opportunities to build ties with culturally similar individuals (Desmond & Kubrin, 2009) which in turn, strengthens neighborhood networks and informal social control.

By comparison, religion remains a relatively understudied and undertheorized aspect of ethnicity in immigration-crime research. Referring to the three R's (refuge, respectability and resources), Hirschman (2004) argues that actively engaging in religious activities can provide immigrants with the critical social and economic capital necessary for successful settlement. Religious organizations can create a sense of belonging and present opportunities for immigrants to form social support networks by creating a community of co-ethnics who regularly gather in a familiar cultural environment (Foner & Alba, 2008; Ley, 2008; Portes & Rumbaut, 2006). Indeed Foner and Alba (2008, p. 362) describe religious organizations as "a source of solace and shelter from the stresses, setbacks, and difficulties of coming to terms with life in a new country." By being a good Christian, Muslim or Buddhist, immigrants can earn respect and prestige within their religious community (Foner & Alba, 2008). Therefore religion can provide immigrants with an alternative source of respectability - this is particularly important for those who experience downward occupational mobility following migration (Foner & Alba, 2008). Finally, religious organizations provide immigrants with access to an array of vital resources and services ranging from employment opportunities to housing to English classes (Connor & Koenig, 2013; Ley, 2008). In doing so, religious organizations help facilitate integration within their own religious group. Thus

at the neighborhood level, the concentration of immigrants affiliated with the same religion should have a protective effect on crime as their involvement in religious activities enables the further development of social networks and in turn bolsters informal social control.

The current study disaggregates the immigrant population by both language spoken at home and religion. By examining the presence of culturally similar immigrants, these group specific concentration measures provide a more robust test of the immigration revitalization thesis which emphasizes the importance of co-ethnics. However from a social disorganization perspective, ethnic diversity is argued to lead to higher neighborhood crime rather than simply ethnic group concentration. Recognizing the potential divergent effect of ethnic diversity on crime, two complementary diversity indices (language diversity and religion diversity) are also considered. Two key questions guide this study. First, how do increases in ethnic group concentration and ethnic diversity impact changes in violent crime within neighborhoods over time? Second, how does ethnic group concentration and ethnic diversity effect violent crime when comparing across neighborhoods?

Methods

Research Sites

Several studies have established that the receptivity of city contexts can moderate the effect of immigration on crime (Martinez et al., 2004; Ramey, 2013). As a general rule, immigrant gateway cities are considered receptive contexts due to their longstanding immigration histories, thriving ethnic economies and access to social institutions (Portes & Rumbaut, 2006; Singer, 2004). Additionally, the presence of established co-ethnics offers a vital source of social capital and can assist with integration processes by helping recent arrivals navigate their new environment (Velez & Lyons, 2012). New immigrant destinations tend to be less receptive contexts. These cities typically exhibit limited co-ethnic presence and immigrant residents tend to lack access to social and economic resources, face oppositional government policies and experience high levels of social

exclusion and discrimination (Ramey, 2013). Given that the social organization of the city can shape the immigration-crime relationship at the neighborhood level, two Australian cities with differing immigration histories are included as research sites in this study.

Sydney Statistical Division (BSD)

With a residential population exceeding 4 million persons, Sydney is the most populated city in Australia and the state capital of New South Wales (ABS, 2011). As a well-established immigrant gateway city (Price & Benton-Short, 2008), Sydney has boasted a sizeable immigrant population for over half century (ABS 2014; Ley & Murphy, 2001). Comprising over one third of the city's total population, approximately 1.5 million immigrants resided in Sydney in 2011 (ABS, 2014). While immigrants from the United Kingdom and New Zealand have historically comprised the largest incoming and established groups, Sydney's immigrant population significantly diversified following World War II. In 2011, six of the top ten countries of birth were in the Asian region (China (2); India (3); Vietnam (5); Philippines (6); South Korea (9); Hong Kong (10)). Today, 96 birthplaces surpass numbers of over 1,000 persons with 67% of Sydney's immigrant population speaking a language other than English at home and 25% affiliated with non-Christian religions (ABS, 2011).

With a long-standing immigration history, a thriving ethnic economy, strong ties to the global economy and a variety of resources available for immigrants, Sydney is in a strong position to effectively integrate new arrivals. Yet most notable about the Sydney context compared to other global immigrant cities (e.g. New York, London, Vancouver) is that while foreign born concentration is high across many neighborhoods, these concentrations are rarely dominated by a single ethnic group (Price & Benton-Short, 2008).

Brisbane Statistical Division (BSD)

Brisbane is the state capital of Queensland and recorded a residential population of 2 million persons in 2011 (ABS, 2011). Brisbane is a relatively new immigrant destination city (Singer, 2004).

Before the 1990s, relatively few immigrants resided in Brisbane (18.10% in 1981) compared to Sydney (27.54% in 1981) (ABS, 1981). Between 2001 and 2011, Brisbane's immigrant population experienced considerable growth with the immigrant share increasing from 22% in 2001 to 27% in 2011. While Sydney also saw a continued increase on previous years, this upward trend was much more pronounced in Brisbane. Unlike New South Wales, Queensland did not encourage diversity in immigration post World War II. As a consequence, Brisbane welcomed fewer non-British immigrants than other capital cities and did not experience significant growth in the non-white population until the 1990s (Burnley, 2001). Today, the majority of Brisbane's immigrant population originates from white, English speaking backgrounds and is much less linguistically diverse than Sydney's with only 41% speaking a language other than English and 14% practicing a non-Christian religion (ABS, 2011). Brisbane however experienced exponential growth in Asian migration over the study period with a 212% increase in the Chinese population and a 350% increase in the Indian population (ABS, 2011).

With non-Anglo-Celtic immigration a relatively recent phenomenon in Brisbane, fewer ethnic institutions and resources are available throughout the city. Therefore it is expected that the limited networks and resources present in Brisbane will reduce capacity for bonds and weaken informal social control. Thus compared to Sydney, it is likely that Brisbane will struggle to "absorb" influxes of new immigrants which in turn may lead to higher neighborhood crime in locations where immigrants settle.

Unit of Analysis

As part of this study, the neighborhood is operationalized as the state suburb. In 2011, 824 state suburbs fell within the Sydney Statistical Division (SSD) boundaries and 429 state suburbs were located within the Brisbane Statistical Division (BSD)[ii]. Yet not all neighborhoods were considered appropriate for inclusion due to low residential populations and high non-residential land

use. Two selection criteria were thus utilized to determine an appropriate analytic sample: (1) the neighborhood had over 300 residents across all census time points; and (2) over 25% of the neighborhood land use was classed as residential in 2011. Four entertainment precincts (two in each city) were also excluded from the analytic sample given the well-established link between the density of licensed premises and violent crime (Livingston, 2008). After excluding these outlier neighborhoods, the final sample includes 580 neighborhoods in Sydney and 302 neighborhoods in Brisbane.

Data Sources

This study draws on three administrative data sources to examine the immigration-crime relationship over time. Crime data for each city was collected from their respective state agency. The New South Wales Bureau of Crime Statistics and Research provided crime data on Sydney and the Queensland Police Service supplied crime data for Brisbane. Information on the socio-demographic and environmental features of neighborhoods was drawn from the 2001, 2006 and 2011 ABS Census of Population and Housing.

Violent Crime Counts

Violent crimes are rare events, especially in the Australian context. Recognizing the methodological challenges associated with modelling crime rates (Osgood, 2000), I utilize crime counts. Given that collection agencies record crime differently and definitions of crime can vary across state boundaries, offense subcategories were cross checked to ensure similar offenses were captured in the two cities. Offenses classified as violent crime in this study include homicide, other homicide (e.g. attempted homicide), assault and robbery. The violent crime count for each corresponding census year was calculated by using the three year average score (e.g. 2000, 2001 and 2002). This approach was taken to avoid an unusually high crime year from biasing the results.

Group Specific Concentration Measures

To assess the effects of language concentration on crime, I divide the immigrant population into nine broad language groups as classified by the ABS (ABS, 2011). These language groups reflect the languages other than English immigrants speak at home and to some extent, map onto their region of origin. These language groups include: Northern European; Southern European; Eastern European; Southeast Asian; Southwest and Central Asian; Southern Asian; Eastern Asian; 'Other'; and English only. To assess the effects of religion concentration on crime, I divide the immigrant population into six religion groups: Buddhism, Christianity, Hinduism, Islam, 'Other' Religions (including Judaism) and No Religion (ABS, 2011).[iii] Table 1 provides an overview of mean levels of concentration for each group at 2001 and 2011.

<<INSERT TABLE 1 HERE>>

Diversity

To measure ethnic diversity, two Blau diversity indices (language diversity and religion diversity) were created comprising the groups listed above (Blau, 1977). A score of 0 on the Blau index signifies an entirely homogenous community whereas a score of 1 represents a completely heterogeneous community. Both indices were multiplied by 100 to assist with interpretation.

Contextual Variables

A number of theoretically and empirically derived socio-demographic and environmental variables are included in the models in order to account for features of the neighborhood that may correlate with both crime and immigration (Martinez & Lee, 2000; Martinez et al., 2004; Martinez et al., 2010; Nielsen et al., 2005).

Disadvantage. To control for the effect of disadvantage on violent crime, a *disadvantage factor* was generated in Stata using the factor command with the principal-component factor (pcf) option. The disadvantage factor is based on three measures: percent unemployed and seeking work,

percent one parent families and percent low-income persons.[iv] Higher scores of the disadvantage factor reflect higher degrees of neighborhood disadvantage. These variables loaded strongly on one factor in both cities at each time point. All variables had loadings of 1.9 or higher.

Residential Instability. As immigration is a strong driver of residential instability, two measures of residential instability (percent households renting and percent households at a different address five years ago) are included in the models.

Percent Young Males. Young males are overrepresented in crime in the broader criminological literature (Boyd, 2000; Hirschi & Gottfredson, 1983). Percent males aged 15-24 years is thus included in the models.

Percent Indigenous. Indigenous Australians are overrepresented in the criminal justice system both as victims and as perpetrators of violent crime (Wundersitz, 2010) with studies linking Indigenous presence to greater recorded crime at the neighborhood level (McCausaland & Vivian 2010). Percent Indigenous is thus included in the models.

Population Density. Population density affects neighborhood environments in ways that can either promote or prevent violent crime. By presenting more opportunities for violence (due to increased contact with or access to potential victims), some contend higher population density is intrinsically linked to higher rates of neighborhood crime. Alternatively, it is also argued that by having more 'eyes on the street,' population density can provide a source of natural surveillance that inhibits potential offenders from engaging in violence (Harries, 2006). To control for the effect of population density on violent crime, a measure of population density was also included in the models. This measure was calculated by dividing the total population of a neighborhood by the area of the neighborhood (in square kilometers). This variable was then rescaled (divided by 100) for interpretation purposes.

Percent Residential Land Use. Environmental criminologists contend certain non-residential land uses (for example, shopping centers, bars, schools and transport stations) either attract or generate opportunities for crime and thus neighborhoods with these features present tend to experience higher rates of crime (McCord & Ratcliffe, 2009). To control for the effect of non-residential land use on violent crime, the land use categories assigned to meshblocks[v] in the 2011 census were used to construct a *percent residential land use* variable for each suburb. Due to data availability, the land use measure is only taken at one time point (2011).

Distance to Central Business District (CBD). Early neighborhood theories of crime predicted a negative correlation between a neighborhood's distance to the CBD and the occurrence of crime (Burgess, 1928). With this in mind, the distance between the centroid of each neighborhood and the centroid of the CBD was estimated to create a distance to CBD measure. To create this measure, ArcGIS and Stata were both employed to compute the Euclidean distance (in km) between the geometric centers of each neighborhood to the CBD.

Nearby Violent Crime. Recognizing the potential for spillover effects (Morenoff, Sampson & Raudenbush, 2001), a spatially lagged violent crime variable was generated to account for violence in surrounding areas based on the average crime rate for 2010, 2011 and 2012 (and thus does not assess change but rather the static level of violent crime in nearby areas). This variable was created in Stata using a spatial weights matrix which employed the rook contiguity matrix. The crime rate measure was then log transformed.

Analytic Strategy

This study utilizes Allison's hybrid models which allow for the simultaneous consideration of within neighborhood and between neighborhood effects (Allison, 2009). The first step for calculating a hybrid model is to create two types of variables: community specific mean-centered variables (for the between effects) and mean-deviated variables (for the within effects). The mean-centered

variables are the predictor variables used to compare between neighborhoods while the mean-deviated variables are used to compare changes within a neighborhood over time. After creating these variables, the next step is to run a regression model with mean-deviated and mean-centered variables included as predictors. By taking this approach, it is possible to assess how change in ethnic group concentration/ diversity impacts violent crime *within* a neighborhood over time and whether concentration/diversity levels impact violent crime when comparing *between* neighborhoods. Table 2 provides descriptive statistics for all mean centered and mean deviated variables. Correlations between all key variables do not exceed 0.70.

<<INSERT TABLE 2 HERE>>

Preliminary analyses revealed that the distribution of the dependent variable is skewed to the right with several neighborhoods reporting either zero or low counts of violent crime. Hybrid estimates for negative binomial regression models were thus estimated as they are less affected by overdispersion (Alison, 2009) (zero inflated models were not required). The models were run using the *xtnbreg* command in Stata with the total resident persons included as the exposure variable. This estimates the outcome as a crime rate. To get correct standard errors, Alison (2009) suggests using an estimation technique that accounts for dependence among the multiple observations for each neighborhood – specifically random effects.

One of the key aims of this study is to understand the impact of increases in ethnic group concentration on crime. However, preliminary analyses revealed that some ethnic groups significantly reduced in size at both the neighborhood and city level over time. For parsimony, I examine within effects for only the ethnic groups that experienced a significant *increase* in size between 2001 and 2011 in both cities. The language and religion models are estimated separately and are both stepped out in two stages. In stage 1, only the immigration measures are included. In

stage 2, the socio-demographic and environmental features of neighborhoods are added. The summary presented here focuses on describing the full models (i.e. the Stage 2 results).

Results

The models presented in Table 3 and 4 allows us to simultaneously test whether it is the process of change in neighbourhood conditions that matters for crime and/or the average level of concentration. The within effects component of the model considers how changes in the predicator variables within a neighbourhood influence changes in that neighbourhood's level of violent crime over time. The between effects component of the model allows for comparisons to be made across neighbourhoods by calculating an average score for the predicator variables. Taken together, this hybrid modelling approach allows us to determine how change influences violent crime *within* a neighbourhood over time as well as compare *across* neighbourhoods.

Language

Sydney

As can be seen in Table 3, the within effects component of the model shows that neighborhoods that experience growth in the immigrant population who speak Southeast Asian languages encounter fewer violent crimes (B=-0.035 p<.001). Similar effects are seen in neighborhoods with an increasing presence of immigrants who speak Southwest and Central Asian (B=-0.033 p<.01), Southern Asian (B=-0.012 p<.001), Eastern Asian (B=-0.022 p<.001) and Northern European languages (B=-0.104 p<.01). Thus even after appropriate neighborhood controls are considered, an increasing presence of these language groups within a neighborhood over time is associated with a significant reduction in violent crime. However, increasing language diversity has a significant and positive effect on violent crime. Thus as language diversity increases within a neighborhood over time, so too does violence (B=0.008 p<.001). Other significant predictors of greater violent crime over time include increases in the presence of young males (B=0.037 p<.001), renters (B=0.009 p<.01), those at a different address five years ago (B=0.003 p<.05) and

disadvantage (B= 0.054 p<.01). Alternatively as population density increases over time, violent crime levels decline (B= -0.020 p<.001).

<<INSERT TABLE 3 HERE>>

Next we consider the between effects component of the model. Areas with a greater average presence of immigrants who speak Southwest and Central Asian (B=-0.034 p<.001), Southern European (B=-0.034 p<.01), Southeast Asian (B=-0.029 p<.001), Eastern Asian (B=-0.039 p<.001) and 'Other' languages (B=-0.091 p<.001) all encounter fewer violent crimes. The average concentration of immigrants who speak Northern European, Eastern European or Southern Asian languages is not significantly associated with violent crime across neighborhoods – neither is the concentration of immigrants who speak English only. Some of the traditional indicators of social disorganization are significantly and positively linked to violent crime *across* neighborhoods including disadvantage (B= 0.376 p<.001) and the number of renters (B= 0.019 p<.001). Population density is associated with greater violent crime in Sydney (B= 0.008 p<.001). Neighborhoods further away from the city center experience greater violent crime (B= 0.006 p<.01) and areas with a higher degree of residential land use experience fewer violent crimes (B= -0.007 p<.001).

Brisbane

Once accounting for the broader neighborhood context, the effect of increases in the immigrant population who speak Southern Asian languages on violent crime remains significant and negative (B=-0.041 p<.05). This group, comprised largely of Indian immigrants, grew by over 194% between 2001 and 2011. Yet despite the relatively small co-ethnic population in 2001, it appears that the large influx of immigrants who speak Southern Asian languages has not increased violence, suggesting that the increase in this language group has most likely not undermined informal social control. Thus despite Brisbane's status as a new immigrant destination site (particularly for these groups) influxes of relatively "new" immigrants do not lead to an increase in neighborhood crime.

After controlling for neighborhood context, changes in language diversity are no longer significantly associated with changes in violent crime. Changes in the immigrant population who speak Southeast Asian, Southwest and Central Asian and Eastern Asian languages have no significant effect on changes in violent crime over time. This too is notable given the significant increases in these populations over the period of study. Other contextual variables are significant predicators of violence crime. For example, as neighborhood disadvantage increases over time, the level of violent crime also rises (B=0.175, p<.001). Increasing population density over time has a similar effect on crime in both cities - as it increases over time in a given neighborhood, violent crime decreases (B=-0.033 p<.001).

When comparing across neighborhoods, the presence of immigrants who speak Northern European languages has a significant and negative effect on violent crime (B=-0.257 p<.01). The average concentration of immigrants who speak Southeast Asian (B=-0.063 p<.01) and Southern Asian languages (B=-0.269 p<.001) are significant and negative predictors of violent crime across neighborhoods. Areas with a greater concentration of immigrants who speak these languages report less violence. After controlling for the structural features of neighborhoods, the presence of immigrants who speak 'Other' languages is significantly and negatively associated with violent crime across Brisbane neighborhoods (B=-0.105 p<.01). Yet more linguistically diverse neighborhoods encounter more violent crime problems, when compared to more linguistically homogenous neighborhoods, even after context is considered (B=0.039 p<.001). After accounting for context, the average concentration of immigrants who speak Southern European, Eastern European, Southwest and Central Asian or Eastern Asian languages has no effect on violent crime across neighborhoods. Neither does the concentration of immigrants who speak English only. Other significant predictors of greater violent crime when comparing across neighborhoods include the level of disadvantage (B=0.273 p<.001), presence of renters (B=0.041 p<.001) and Indigenous

presence (B=0.042 p<.05). Like Sydney, neighborhoods with greater residential land use face fewer violent crime problems (B=-0.007 p<.001.[vi]

Religion

Sydney

In the within effects component of the model (see Table 4), an increasing presence of Muslim immigrants is significantly linked to less violent crime over time (B=-0.024 p<.001). When holding neighborhood context constant, the increasing presence of immigrants without a religious affiliation is related to less violent crime within a neighborhood over time (B=-0.049 p<.001). Changes in other groups (Buddhists, Hindus and 'Others') have no significant effect on violent crime over time, nor does changes in religion diversity once controlling for neighborhood features.

In the between effects component of the model, the concentration of Muslim immigrants is significantly and negatively associated with violent crime across neighborhoods even after controlling for broader neighborhood factors (B=-0.036 p<.01). This finding is particularly notable. Despite concerns surrounding the concentration of Muslim immigrants in Australian neighborhoods, the results presented here suggest such anxieties are largely unwarranted. Areas with a greater presence of immigrants affiliated with 'Other' religions like Judaism also experience less violent crime (B=-0.032 p<.001), as do areas with a greater average concentration of Buddhist immigrants (B=-0.037 p<.001). Similar to the within effects component of the model, these effects are not limited to immigrants affiliated with a particular religion. Neighborhoods with a greater concentration of immigrants who report no religious affiliation also encounter fewer violent crime problems (B=-0.051 p<.05). The presence of Christian and Hindu immigrants has no effect on violent crime across neighborhoods. Yet areas with a higher average level of religion diversity experience more violent crimes (B=0.016 p<.001).

<<INSERT TABLE 4 HERE>>

Brisbane

In the within effects component of the model, changes in the immigrant population with no religious affiliation is a significant and negative predicator of violent crime over time (B=-0.027 p<.01). I find no effect for all other religious affiliations. Change in religion diversity is not significantly associated with neighborhood violent crime. In the between effects component of the model, no immigrant group is significantly associated with violent crime after accounting for context. Yet, religion diversity is significantly linked to more violent crime (B=0.036 p<.001). This suggests areas with a greater average level of religious diversity experience more violent crimes than less religiously diverse neighborhoods.

Discussion

While a growing body of research suggests that immigration is not linked to greater crime, few studies to date have explored the particularities of immigrant ethnicity (see for exception Kubrin et al., 2016) or the effect of ethnic diversity (see for exception Feldmeyer et al., 2016). The findings from this study demonstrate that once disaggregating the immigrant population by language and religion, the conclusions drawn from previous research remain. By taking a hybrid modeling approach, this study explored how change in ethnic group concentration/ diversity impacts violent crime *within* a neighborhood over time as well as whether concentration/diversity levels impact violent crime when comparing *between* neighborhoods. Overall, the results indicate that growth in the immigrant population – regardless of the language or religion group under consideration - does not lead to more violent crime within a neighborhood. Further, no language or religion group concentration is associated with more violent crime once the socio-structural and environmental features of neighborhoods are considered. Indeed, the growth and concentration of some ethnic groups is actually linked to less violent crime. There is no evidence that increased immigration leads to more neighborhood violence in the Australian context.

However, there are some key differences between the two cities which largely reflect their varied immigration histories and the resources available for new immigrants. In Sydney - the established immigrant gateway – an increase in the share of Northern European, Southeast Asian, Southern Asian, Eastern Asian or Southwest and Central Asian speaking immigrants is linked to less violent crime over time. Additionally, increases in the Muslim born population are related to reductions in violence over time. In this city, it is likely that the thriving ethnic economy coupled with easy access to resources and social organizations (including non-Christian religious institutions and schools) helps facilitate the economic incorporation of the immigrant population (Velez & Lyons, 2012) and create a sense of home for immigrants suffering from feelings of disorientation and displacement. At the neighborhood level, the availability of these resources helps encourage opportunities to build social ties with culturally similar individuals (Breton, 1964; Desmond & Kubrin, 2009) which in turn, helps strengthen neighborhood networks and informal social control.

In Brisbane – the relatively new immigrant destination city - changes in language concentration have a null effect on violent crime over time (with the exception of immigrants who speak Southern Asian languages). Similarly, changes in the religion groups are non-significant. This suggests the protective effect of changes in ethnic group concentration are more prevalent in Sydney compared to Brisbane. This is not surprising given that Brisbane's ethnic economy operates on a much smaller scale and fewer ethnic institutions and resources are available throughout the city (Burnely, 2001). Sydney is better positioned to integrate new arrivals compared to Brisbane which in turn, appears to have consequences for neighborhood crime over time.

There are again some key differences between the two cities when considering the effect of ethnic group concentration *across* neighborhoods. For example, the concentration of immigrants who speak Northern European and Southern Asian languages is linked to less violent crime across Brisbane neighborhoods but not across neighborhoods in Sydney. Conversely, neighborhoods with a

greater concentration of immigrants who speak Southern European, Eastern Asian and Southwest and Central Asian languages experience fewer violent crimes in Sydney but not in Brisbane. For the most part, these differences may be a result of varying levels of concentration across neighborhoods in the two sites. Neighborhoods in Brisbane may not reach the level of concentration necessary in order for the presence of immigrants who speak Southern European, Eastern Asian or Southwest and Central Asian languages to have a protective effect on crime. Similarly, the concentration of immigrants who speak Northern European languages is slightly higher in the Brisbane context. The exception here is immigrants who speak Southern Asian languages. The concentration of this group across neighborhoods is higher in the Sydney context compared to Brisbane - although is only significant in Brisbane. Higher concentrations of Muslim, Buddhist and Other Religion immigrants are linked to lower violence in Sydney but not in Brisbane. Again, this is likely due to the more sizeable presence of these religious groups in Sydney compared to Brisbane.

Some consistencies are found across the two sites. For example, the concentration of immigrants who speak Southeast Asian languages is linked to less violent crime across both Brisbane and Sydney neighborhoods. This group (comprised largely of Vietnamese) is sizeable and well established in both cities - first arriving in Sydney during the 1970s and in Brisbane in the 1990s (Burnley, 2001). Before including the socio-structural and environmental variables, the concentration of immigrants who speak 'Other' languages was linked to more crime across Sydney neighborhoods (with no significant association found in Brisbane). After the controls were included, the concentration of immigrants who speak 'Other' languages is associated with significantly less violent crime across neighborhoods in both sites. This finding in particular reinforces the importance of considering the broader neighborhood context in immigration-crime research.

While ethnic group concentration is largely beneficial for neighborhood crime, the effect of language and religion diversity is problematic in both cities. In Sydney, increasing language diversity

within a neighborhood is associated with more violent crime over time yet non-significant in Brisbane. When comparing across neighborhoods, the effect of language diversity is consistent across the two sites. In both cities, areas with a higher average level of language diversity encounter greater crime problems, so too do more religiously diverse neighborhoods. These findings reinforce the importance of considering both concentration and diversity effects in immigration-crime research. While ethnic group concentration may assist in bolstering informal social control (particularly in established immigrant gateways) through forming connections with culturally similar individuals, language or religion diversity can have the opposite effect and instead weaken a community's regulatory capacity. This is because if residents are unable to communicate with one another in a common language or share a common ground, they are less likely to interact with other residents which in turn weakens social ties and informal social control (Feldmeyer et al., 2016). Together, these findings highlight the contrasting effects of concentration and diversity on crime and provide empirical support for both disorganization and revitalization arguments.

Limitations and Future Research

While this study advances immigration-crime scholarship in several, important ways, it is not without its limitations. First, the results presented here are largely dependent on the unit of analysis chosen: the state suburb. While Australians tend to perceive their state suburb as their local neighborhood, it is important to recognize that these findings may vary across different geographies (Openshaw & Taylor, 1979; Wong, 2004). Additionally, the findings do not represent the offending rates of particular ethnic groups. I thus cannot conclude that certain ethnic groups offend at a higher or lower rate than others. Evidence from the United States suggests variability between groups exists (Feldmeyer & Steffensmeier, 2009; Lee et al., 2001) yet few studies beyond this context disaggregate violent crime measures by offender ethnicity.

Like many other immigration-crime studies to date (Feldmeyer, 2009; Feldmeyer &

Steffensmeier, 2009; Lee & Martinez, 2002; Martinez et al., 2010; Martinez et al., 2008), this study focused solely on violent crime. Yet evidence suggests that the immigration-crime relationship varies depending on the crime type under examination (Bell et al., 2013; Kubrin et al., 2016). In particular, some argue that immigrant concentration is associated with more instrumental forms of offending (such as robbery and theft) compared to expressive crimes (such as assault and homicide) (Bell et al., 2013). Moreover, this study relied on an aggregated measure of violent crime comprised of all homicides, assaults and robberies within a given neighborhood. Given the different opportunity structures for different crime types, Andresen and Linning (2012) argue against using broad categories when considering spatial variations in crime. However, violent crime is a relatively rare event, particularly in the Australian context. This aggregation was therefore necessary in order to avoid a large number of zero cell counts in the dependent variable. Nevertheless, the use of this broad crime measure is a potential limitation of the study.

The modelling strategy employed does not address the potential for crime patterns to shape immigration patterns or for immigrants to self-select into already low crime neighborhoods. This is problematic as we know that immigrants are not randomly distributed across the city but rather select certain communities for settlement. In some cases, immigrants with fewer resources may be left with little choice but to settle in high crime neighborhoods while other immigrant groups may purposely avoid moving into such areas (MacDonald et al., 2013). Such issues with endogeneity are widely recognized by immigration-crime scholars as a potential limitation of this research (Bell et al., 2013; MacDonald et al., 2013).

Lastly, future research should explore the motives which drive migratory decisions rather than solely relying on ethnic background. It is likely that an immigrant population who en masse move for work or family reunification will differentially impact crime rates compared to an immigrant population who are forced to migrate. Yet to date, few studies empirically test this

assumption (see for exception Bell et al., 2010; Stansfield, 2014). Examining the push/pull factors which shape migratory decisions (preferably within a cross cultural, comparative framework) is an important next step for immigration-crime research.

Reference List

Australian Bureau of Statistics (2011). 2011 Census Data via Tablebuilder. Retrieved from: http://www.abs.gov.au/websitedbs/censushome.nsf/home/tablebuilder

Australian Bureau of Statistics. (2014). Where do migrants live? Retrieved from http://www.abs.gov.au/ ausstats/abs@.nsf/Lookup/4102.0main+features102014

Allison, P. (2009). *Fixed effects regression models.* Los Angeles: Sage Publications.

Andresen, M. A., & Linning, S. J. (2012). The (in) appropriateness of aggregating across crime types. *Applied Geography*, *35*(1), 275-282.

BBC News. (2017, February 27). Reality check: Is Malmo the 'rape capital' of Europe. Retrieved from: http://www.bbc.com/news/uk-politics-39056786

Bell, B., Fasani, F., & Machin, S. (2013). Crime and immigration: Evidence from large immigrant waves. *Review of Economics and Statistics*, *21*(3), 1278-1290

Blau, P. M. (1977). *Inequality and heterogeneity: A primitive theory of social structure*. New York: Free Press.

Boyd N. (2000). *The beast within: Why men are violent*. Vancouver, BC: Greystone Books.

Burgess, E. (1928). The growth of the city. In R. E. Park., E. W. Burgess and R. D. McKenzie. *The City.* Chicago: University of Chicago Press.

Burnley, I. (2001). *The impact of immigration on Australia: A demographic approach*. United Kingdom: Oxford University Press.

Butcher, K. F., & Piehl, A. M. (1998). Cross-city evidence on the relationship between immigration and crime. *Journal of Policy Analysis and Management*, *17*(3), 457-493.

Butcher, K. F., & Piehl, A. M. (2007). *Why are immigrants' incarceration rates so low? Evidence on selective immigration, deterrence, and deportation*. NBER Working Papers 13229, National Bureau of Economic Research, Inc.

Commonwealth of Australia. Senate. (2016). Parliamentary debates (Official Hansard). Retrieved from: http://parlinfo.aph.gov.au/parlInfo/download/chamber/ hansards/16daad94-5c74-4641a7307f6d74312148/toc_pdf/Senate_2016_09_14_4436 _Official.pdf;fileType=application%2Fpdf#search=%22chamber/hansards/16daad94-5c74-4641-a730-7f6d74312148/0139%22

Connolly, K (2016, June 19). Frauke Petry: The acceptable face of Germany's new right? Retrieved from: https://www.theguardian.com/world/2016/jun/19/frauke-petry-acceptable-face-of-germany-new-right-interview

Connor, P., & Koenig, M. (2013). Bridges and barriers: Religion and immigrant occupational attainment across integration contexts. *International Migration Review. 47*(1), 3-38.

Desmond, S. A., & Kubrin, C. E. (2009). The power of place: Immigrant communities and adolescent violence. *The Sociological Quarterly*, *50*(4), 581-607.

Feldmeyer, B. (2009). Immigration and violence: The offsetting effects of immigrant concentration on Latino violence. *Social Science Research*, *38*(3), 717-731.

Feldmeyer, B., Harris, C. T. & Lai, D. (2016). Language use and violence: Assessing the relationship between linguistic context and macro-level violence. *Sociological Forum*, 31(2), 267-290.

Feldmeyer, B., & Steffensmeier, D. (2009). Immigration effects on homicide offending for total and race/ethnicity-disaggregated populations (White, Black, and Latino). *Homicide Studies*, *13*(3), 211-226.

Foner, N. & Alba, R. (2008). Immigrant religion in the US and Western Europe: Bridge or barrier to inclusion? *International Migration Review*, *42*(2), 360-392.

Graif, C., & Sampson, R. J. (2009). Spatial heterogeneity in the effects of immigration and diversity on neighborhood homicide rates. *Homicide studies*, 13(3), 242-260.

Hagan, J., & Palloni, A. (1999). Sociological criminology and the mythology of Hispanic immigration and crime. *Social Problems*, *46*(4), 617-632.

Harris, C. T., & Feldmeyer, B. (2013). Latino immigration and White, Black, and Latino violent crime: A comparison of traditional and non-traditional immigrant destinations. *Social Science Research*, *42*(1), 202-216.
Harries, K. (2006). Property crimes and violence in United States: An analysis of the influence of population density. *International Journal of Criminal Justice Sciences*, *1*(2), 24-34.
Hirschi, T., & Gottfredson, M. (1983). Age and the explanation of crime. *American Journal of Sociology,* 89(3), 552-584.
Hirschman, C. (2004). The role of religion in the origins and adaptation of immigrant groups in the United States. *International Migration Review*, *38*(3), 1206-1233.
Kubrin, C. E., Hipp, J. R., & Kim, Y. A. (2016). Different than the sum of its parts: Examining the unique impacts of immigrant groups on neighborhood crime rates. *Journal of Quantitative Criminology*, 1-36.
Lee, M. T., Martinez, R., & Rosenfeld, R. (2001). Does immigration increase homicide? *The Sociological Quarterly*, *42*(4), 559-580.
Lee, M. T. & Martinez, R. (2002). Social disorganization revisited: Mapping the recent immigration and black homicide relationship in northern Miami. *Sociological Focus*, *35*(4), 363-380.
Ley, D. (2008). The immigrant church as an urban service hub. *Urban Studies, 45*, 2057-2074.
Ley, D., & Murphy, P. (2001). Immigration in gateway cities: Sydney and Vancouver in comparative perspective. *Progress in Planning*, *55*(3), 119-194.
Light, M. T. (2017). Re-examining the relationship between Latino immigration and racial/ethnic violence. *Social Science Research*. *65,* 222-239.
Livingston, M. (2008). A longitudinal analysis of alcohol outlet density and assault. *Alcoholism: Clinical and Experimental Research*, *32*(6), 1074-1079.
MacDonald, J. M., Hipp, J. R., & Gill, C. (2013). The effects of immigrant concentration on changes in neighborhood crime rates. *Journal of Quantitative Criminology*, *29*(2), 191-215.
Markus, A. Jupp, J. and McDonald, P. (2009). *Australia's immigration revolution*. New South Wales: Allen and Unwin.
Markus, A. (2013). Mapping social cohesion national report 2013. Retrieved from: http://scanlonfoundation.org.au/research/surveys/
Martin, P. L. (2017). Election of Donald Trump and migration. *Migration Letters*, *14*(1), 161-171.
Martinez, R., Stowell, J. I., & Cancino, J. M. (2008). A tale of two border cities: Community context, ethnicity, and homicide. *Social Science Quarterly*, *89*(1), 1-16.
Martinez, R., Stowell, J. I., & Lee, M. T. (2010). Immigration and crime in an era of transformation: A longitudinal analysis of homicides in San Diego neighborhoods, 1980–2000. *Criminology*, *48*(3), 797-829.
Martinez, R., & Lee, M. (2000). On Immigration and Crime. *Criminal Justice* 1, 486-524.
Martinez, R., Lee, M. T., & Nielsen, A. L. (2004). Segmented assimilation, local context and determinants of drug violence in Miami and San Diego: Does ethnicity and immigration matter? *International Migration Review*, *38*(1), 131-157.
Mazerolle, L., Wickes, R., & McBroom, J. (2010). Community variations in violence: The role of social ties and collective efficacy in comparative context. *Journal of Research in Crime and Delinquency*, *47*(1), 3-30.
McCausland, R., & Vivian, A. (2010). Why do some Aboriginal communities have lower crime rates than others? A pilot study. *Australian & New Zealand Journal of Criminology*, *43*(2), 301-332.
McCord, E. S. & Ratcliffe, J. H. (2009). Intensity value analysis and the criminogenic effects of land use features on local crime patterns. *Crime Patterns and Analysis*, *2*(1), 17-30.
McKie, R. (2017, February 19). Far-right leader Geert Wilders calls Moroccan migrants 'scum' https://www.theguardian.com/world/2017/feb/18/geert-wilders-netherlands-describes-immigrants-scum-holland

Morenoff, J. D., Sampson, R. J., & Raudenbush, S. W. (2001). Neighborhood inequality, collective efficacy, and the spatial dynamics of urban violence. *Criminology*, *39*(3), 517-558.
Nielsen, A. L., Lee, M. T., & Martinez, R. (2005). Integrating race, place and motive in social disorganization theory: Lessons from a comparison of black and Latino homicide types in two immigrant destination cities. *Criminology*, *43*(3), 837-872.
Openshaw, S., & Taylor, P. J. (1979). A million or so correlation coefficients: three experiments on the modifiable areal unit problem. *Statistical Applications in the Spatial Sciences*, *21*, 127-144.
Osgood, D. W. (2000). Poisson-based regression analysis of aggregate crime rates. *Journal of Quantitative Criminology*, *16*(1), 21-43.
Ousey, G. C. & Kubrin, C. E. (2009). Exploring the connection between immigration and violent crime rates in US cities, 1980–2000. *Social Problems*, *56*(3), 447-473.
Ousey, G. C., & Kubrin, C. E. (2018). Immigration and crime: Assessing a contentious issue. *Annual Review of Criminology*, *1*, 63-84.
Portes, A. & Rumbaut, R. G. (2006). *Immigrant America: a portrait*. California and London: University of California Press.
Price, M. & Benton-Short, L. (2008). *Migrants to the metropolis: the rise of immigrant gateway cities*. New York: Syracuse University Press.
Ramey, D. M. (2013). Immigrant revitalization and neighborhood violent crime in established and new destination cities. *Social Forces*, *92*(2), 597-629.
Rumbaut, R, Gonzales, R, Komaie, G, Morgan, C & Tafoya-Estrada, R. (2006). Immigration and incarceration: Patterns and predictors of imprisonment among first- and second generation young adults. In R. Martinez and A. Valenzuela (eds). *Immigration and crime: Race, ethnicity and violence* (pp.64-89) New York: New York University Press.
Sampson, R. J. (2008). Rethinking crime and immigration. *Contexts*, *7*(1), 28-33.
Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social-disorganization theory. *American Journal of Sociology*, *94*(4), 774-802.
Shaw, C. R., & McKay, H. D. (1942). *Juvenile Delinquency and Urban Areas: A Study of Rates of Delinquents in Relation to Differential Characteristics of Local Communities in American Cities.* Chicago, IL: University of Chicago Press.
Singer, A. (2004). *The rise of new immigrant gateways*. Washington, DC: Brookings Institution Press.
Stansfield, R. (2014). Safer cities: A macro-level analysis of recent immigration, Hispanic-owned businesses ad crime rates in the United States. *Journal of Urban Affairs*, *36*(3), 503-518.
Stowell, J. (2007) *Immigration and crime: The effects of immigration on criminal behavior*. LFB Scholarly Publishing LLC.
Sydes, M. (2017). Revitalized or disorganized? Unpacking the immigration-crime link in a multiethnic setting. *Journal of Research in Crime and Delinquency*, *54* 5: 680-714.
Wadsworth, T. (2010). Is immigration responsible for the crime drop? An assessment of the influence of immigration on changes in violent crime between 1990 and 2000. *Social Science Quarterly*, *91*(2), 531-553.
Wickes, R., Zahnow, R., White, G., & Mazerolle, L. (2013b). Ethnic diversity and its impact on community social cohesion and neighborly exchange. *Journal of Urban Affairs*, *36*(1), 51-78.
Wong, D. W. (2004). The modifiable areal unit problem (MAUP). In J. Donald, Warf, B. and Hansen, K. (eds). *Worldminds: Geographical perspectives on 100 problems* (pp. 571-575). Netherlands: Springer.
Wundersitz, J. (2010). *Indigenous perpetrators of violence: Prevalence and risk factors for offending.* Canberra: Australian Institute of Criminology.

Table 1 Descriptive statistics for key variables of interest at 2001 and 2011

	SYDNEY (N=580)						BRISBANE (N=302)					
	2001			2011			2001			2011		
	Mean (S.D)	Min	Max	Mean (S.D)	Min	Max	Mean (S.D)	Min	Max	Mean (S.D)	Min	Max
Violent Crime Counts	67.64 (101.7)	0.00	773.33	58.91 (87.21)	0.33	869.33	23.51 (26.07)	0.00	165.33	21.47 (25.42)	0.00	195
% Northern European	0.51 (0.36)	0.00	2.88	0.60 (0.48)	0.00	2.43	0.63 (0.37)	0.00	2.17	0.84 (0.53)	0.00	3.03
% South European	3.53 (2.26)	0.00	20.97	3.13 (2.71)	0.00	16.34	1.08 (1.01)	0.00	7.85	1.08 (0.93)	0.00	6.82
% East European	2.04 (1.93)	0.00	18.38	1.59 (1.42)	0.00	12.60	0.90 (0.86)	0.00	4.47	0.75 (0.63)	0.00	3.35
% Southeast Asian	2.26 (3.22	0.00	21.24	2.74 (3.97)	0.00	27.85	0.22 (0.30)	0.00	1.85	0.49 (0.68)	0.00	4.95
% Southwest Central Asian	1.37 (2.16)	0.00	22.21	2.65 (4.53)	0.00	42.39	0.50 (0.61)	0.00	4.50	1.49 (1.56)	0.00	8.14
% Southern Asian	2.46 (3.98)	0.00	33.19	2.84 (4.29)	0.00	36.00	1.10 (2.19)	0.00	20.47	1.57 (2.21)	0.00	18.13
% Eastern Asian	3.92 (4.73)	0.00	29.29	4.92 (6.54)	0.00	42.37	1.46 (3.17)	0.00	28.91	2.29 (4.41)	0.00	31.29
% 'Other'	1.07 (1.60)	0.00	18.82	0.65 (1.12)	0.00	10.09	0.97 (1.44)	0.00	9.87	0.85 (1.40)	0.00	9.19
% English Only	11.70 (4.52)	2.31	29.42	11.40 (5.02)	2.83	29.85	13.43 (3.49)	4.66	25.47	14.14 (3.62)	3.55	25.28
Language Diversity	44.30 (22.00)	7.84	97.13	47.04 (22.28)	9.76	92.58	22.75 (13.26)	4.80	92.23	29.13 (15.80)	4.58	96.17
% Buddhist	2.12 (3.44)	0.00	36.96	2.44 (3.55)	0.00	35.58	1.00 (1.71)	0.00	12.29	1.27 (1.69)	0.00	9.41
% Christian	17.65 (6.09)	5.56	42.17	16.82 (5.67)	6.72	39.97	12.03 (3.85)	4.46	25.99	12.76 (2.70)	3.96	23.53
% Hindu	0.84 (1.42)	0.00	18.49	1.60 (3.11)	0.00	33.27	0.29 (0.40)	0.00	2.58	0.44 (0.57)	0.00	3.49
% Islamic	1.54 (2.34)	0.00	21.72	1.98 (3.29)	0.00	33.72	0.38 (0.57)	0.00	4.58	0.79 (1.20)	0.00	12.98
% Other Religion	0.77 (1.78)	0.00	22.62	0.93 (4.31)	0.00	25.32	0.24 (0.23)	0.00	1.47	0.48 (0.47)	0.00	2.93
% No Religion	3.86 (2.60)	0.35	14.95	5.81 (4.31)	0.00	28.11	3.37 (1.49)	0.67	11.62	5.46 (2.61)	0.88	18.32
Religion Diversity	48.49 (12.03)	17.41	97.05	53.66 (11.45)	22.31	88.77	48.15 (7.45)	34.50	93.79	54.45 (7.55)	37.16	97.14

* Differences over time are statistically significant over time with the exception of Southern European speaking immigrants in Brisbane

Table 2 Descriptive statistics for mean-centered and mean-deviated variables

	SYDNEY (N=580)							BRISBANE (N=302)						
	Overall		**Between**			**Within**		**Overall**		**Between**			**Within**	
	Mean	S.D	Min	Max	S.D	Min	Max	Mean	S.D	Min	Max	S.D	Min	Max
Language Concentration														
% Northern European	0.57	0.39	0.00	2.21	0.22	-0.81	2.52	0.73	0.42	0.00	2.85	0.27	-0.33	2.14
% Southern European	3.31	3.05	0.00	18.63	-	-	-	1.06	0.94	0.00	7.48	-	-	-
% Eastern European	1.76	1.62	0.00	15.58	-	-	-	0.80	0.72	0.00	3.91	-	-	-
% Southeast Asian	2.61	4.09	0.00	33.92	0.47	-0.85	4.91	1.30	2.144	0.00	18.19	0.43	-0.93	4.56
% Southwest and Central Asian	2.52	3.58	0.00	24.39	0.64	-5.75	9.24	0.34	0.44	0.00	3.13	0.28	-1.37	3.55
% Southern Asian	1.94	3.16	0.00	29.92	1.32	-11.00	15.36	0.90	0.94	0.00	4.72	0.68	-1.96	4.40
% Eastern Asian	4.41	5.53	0.00	35.11	1.31	-11.16	24.71	1.85	3.70	0.00	29.29	0.88	-6.87	9.20
% Other Languages	0.61	0.72	0.00	7.51	-	-	-	0.73	0.86	0.00	6.15	-	-	-
% English Only	11.47	4.61	2.81	28.90	-	-	-	11.97	2.91	4.54	23.44	-	-	-
Religion Concentration														
% Buddhist	2.27	3.49	0.00	35.95	0.40	-0.81	5.20	1.13	1.70	0.00	10.02	0.33	-0.70	3.41
% Christian	17.18	5.78	7.27	40.33	-	-	-	13.17	3.76	4.77	24.10	-	-	-
% Hindu	1.19	2.13	0.00	21.74	0.94	-10.95	12.72	0.52	0.57	0.00	3.15	0.38	-1.22	2.38
% Islamic	1.73	2.78	0.00	27.14	0.59	-5.28	8.31	0.56	0.87	0.00	8.74	0.44	-3.60	4.80
% Other Religions	0.84	1.85	0.00	24.63	0.34	-2.34	4.41	0.32	0.27	0.00	1.58	0.24	-0.64	1.90
% No Religion	4.76	3.33	0.66	21.95	1.25	-5.27	19.08	4.34	1.92	0.99	14.15	1.13	-1.42	9.87
Diversity Indices														
Language Diversity	46.07	22.01	10.52	94.24	3.09	31.21	63.83	26.07	14.13	7.19	93.39	3.97	12.27	40.46
Religion Diversity	51.33	11.61	20.33	91.66	3.26	33.17	72.35	51.91	7.06	37.62	95.17	3.48	37.83	63.40
Contextual Variables														
% Indigenous	1.24	1.54	0.00	12.03	0.43	-1.86	7.41	1.95	2.48	0.08	35.54	0.48	-4.48	6.50
% Young Males	6.75	1.48	3.05	15.00	0.73	0.08	12.84	7.33	1.92	2.36	22.46	0.61	4.45	10.56
% Renters	24.31	12.78	1.21	81.35	2.19	7.33	54.22	25.71	11.58	2.78	50.49	2.31	16.29	41.32
% Different Address 5 Years	34.15	8.56	19.78	63.11	5.08	9.72	66.42	40.97	7.69	10.72	71.42	4.33	27.51	58.70
Disadvantage	0.06	1.08	-1.87	5.42	0.27	-1.21	1.99	0.19	0.80	-1.59	2.66	0.30	-0.81	1.27
Population Density	27.23	20.16	0.73	193.52	3.40	-0.08	65.35	13.11	9.75	0.19	52.00	1.65	-8.33	28.61
% Residential Land Use	66.62	18.99	25.17	100.00	-	-	-	66.12	18.17	25.57	100.00	-	-	-
Distance to CBD	25.83	19.24	0.89	88.33	-	-	-		19.18	11.93	1.04	61.67	-	-
Nearby Crime	6.42	0.71	0.00	8.58	-	-	-	5.40	1.04	0.00	7.35	-	-	-
N				1740							906			
n				580							302			
T				3							3			

Table 3 Language, immigration and neighborhood crime

	SYDNEY (N=580)						BRISBANE (N=302)					
	B		*SE*	B		*SE*	B		*SE*	B		*SE*
			Within						*Within*			
% Northern European	-0.202	***	0.03	-0.104	**	0.03	-0.078		0.04	-0.024		0.04
% South East Asian	-0.040	***	0.01	-0.035	***	0.01	0.022		0.02	0.005		0.02
% South West Central Asian	-0.043	***	0.01	-0.033	***	0.01	-0.027		0.03	-0.037		0.03
% Southern Asian	-0.023	***	0.00	-0.012	***	0.00	-0.078	***	0.02	-0.041	*	0.02
% Eastern Asian	-0.035	***	0.00	-0.022	***	0.00	0.014		0.01	-0.008		0.01
Language Diversity	0.005	*	0.00	0.008	***	0.01	-0.008	**	0.00	0.005		0.00
% Indigenous				-0.055		0.01				0.003		0.02
% Young Males				0.037	***	0.01				0.027		0.01
% Renting				0.009	***	0.00				-0.001		0.00
% Different Address (5yrs)				0.003	*	0.00				0.000		0.00
Disadvantage				0.054	**	0.02				0.175	***	0.03
Population Density				-0.020	***	0.00				-0.033	***	0.01
			Between						*Between*			
% Northern European	-0.466	***	0.12	-0.073		0.09	-0.643	***	0.11	-0.257	**	0.10
% Southern European	-0.062	***	0.01	-0.034	**	0.01	-0.079		0.06	-0.077		0.05
% Eastern European	0.029		0.02	-0.023		0.02	-0.114		0.08	-0.034		0.06
% Southeast Asian	-0.024	**	0.01	-0.029	***	0.01	-0.092	**	0.03	-0.063	**	0.02
% Southwest Central Asian	-0.017		0.01	-0.034	***	0.01	0.107		0.14	0.058		0.11
% Southern Asian	-0.011		0.01	-0.009		0.01	-0.464	***	0.08	-0.296	***	0.06
% Eastern Asian	-0.034	***	0.01	-0.039	***	0.01	-0.039	*	0.02	-0.022		0.02
% 'Other'	0.183	***	0.03	-0.091	***	0.02	0.067		0.05	-0.105	**	0.04
% English Only	-0.002	***	0.01	-0.004		0.01	0.040	*	0.02	0.006		0.01
Language Diversity	0.014	***	0.00	0.019	***	0.00	0.062	***	0.01	0.039	***	0.01
% Indigenous				0.046		0.03				0.029	*	0.01
% Young Males				-0.020		0.01				-0.016		0.02
% Renting				0.019	***	0.00				0.024	**	0.01
% Different Address (5yrs)				0.006		0.00				0.005		0.01
Disadvantage				0.376	***	0.06				0.443	***	0.08
Population Density				0.008	***	0.00				-0.003		0.01
Nearby Violent Crime				-0.008		0.03				-0.003		0.03
			Random						*Random*			
Distance to CBD				0.006	**	0.00				-0.002		0.01
Residential Land Use				-0.007	***	0.00				-0.006	**	0.01
Constant	-4.959	***	0.14	-5.242	**	0.30	-5.227	***	0.32	-4.593	***	0.46
ln (r)	1.649 (0.07)			2.802 (0.09)			2.587 (0.21)			3.594(0.31)		
ln (s)	1.583 (0.08)			2.333 (0.08)			1.161 (0.11)			1.71 (0.12)		
Log likelihood	-6798.77			-6451.28			-2858.26			-2732.16		

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

Table 4 Religion, immigration and neighborhood crime

	SYDNEY (N=580)						BRISBANE (N=302)					
	B		*SE*	B		*SE*	B		*SE*	B		*SE*
			Within						*Within*			
% Buddhist	0.013		0.01	0.013		0.01	0.048		0.03	0.026		0.03
% Hindu	-0.002		0.00	-0.002		0.00	-0.080	*	0.03	-0.032		0.03
% Muslim	-0.024	***	0.01	-0.024	***	0.01	-0.021		0.02	-0.029		0.02
% No Religion	-0.049	***	0.00	-0.049	***	0.00	-0.045	***	0.01	-0.027	*	0.01
% 'Other' Religions	-0.006		0.01	-0.006		0.01	0.026		0.05	-0.023		0.05
Religion Diversity	-0.002		0.00	-0.002		0.00	-0.007	*	0.00	0.005		0.00
% Indigenous				-0.042		0.01				0.003		0.02
% Young Males				0.030	***	0.01				0.026		0.02
% Renting				0.009	***	0.00				-0.000		0.00
% Different Address (5yrs)				0.000		0.00				-0.000		0.00
Disadvantage				0.039	*	0.02				0.172	***	0.03
Population Density				-0.015	***	0.00				-0.026	***	0.01
			Between						*Between*			
% Buddhist	-0.041	***	0.01	-0.037	***	0.01	-0.010		0.04	-0.007		0.03
% Christian	0.014	*	0.01	0.008		0.00	0.015		0.01	-0.014		0.02
% Hindu	0.005		0.01	0.009		0.01	-0.135		0.11	-0.064		0.09
% Muslim	-0.036	**	0.01	-0.036	**	0.01	0.035		0.07	-0.050		0.05
% No Religion	-0.147	***	0.01	-0.051	***	0.01	-0.156	***	0.03	-0.020		0.03
% 'Other' Religions	-0.115	***	0.02	-0.032	*	0.01	-0.229		0.20	-0.078		0.16
Religion Diversity	0.060	***	0.00	0.016	***	0.00	0.087	***	0.01	0.036	***	0.01
% Indigenous				0.029		0.02				0.033	*	0.01
% Young Males				-0.009		0.01				-0.002		0.02
% Renting				0.019	***	0.00				0.024	***	0.02
% Different Address (5yrs)				0.004		0.00				-0.003		0.02
Disadvantage				0.358	***	0.05				0.386	***	0.07
Population Density				0.010	***	0.00				0.003		0.01
Nearby Violent Crime				-0.027		0.03				-0.006		0.03
			Random						*Random*			
Distance to CBD				0.003		0.00				-0.000		0.00
Residential Land Use				-0.007	***	0.00				-0.006	**	0.00
Constant	-6.922	***	0.23	-5.239	***	0.32	-8.041	***	0.49	-5.700	***	0.05
ln (r)	1.801(0.08)			16.578 (1.51)			2.625 (0.22)			3.552 (0.31)		
ln (s)	1.373 (0.07)			9.174 (0.74)			1.077 (0.105)			1.659 (0.12)		
Log likelihood	-6730.644***			-6443.66***			-2852.964***			-2736.257***		

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

Notes

[i] Comprised of immigrants from Cuba, Ecuador and Italy.

[ii] Administrative boundaries tend to change over time as a result of population growth and urban sprawl. Changing classification systems also present issues for comparison over time. In this study, the state suburb boundaries shifted to varying degrees between 2001 and 2011. To deal with these changes, the ABS provides correspondence files which help create comparable units over time. Using a proportional approach, data from the 2001 and 2006 census were matched to the 2011 state suburb boundaries.

[iii] It is recognized that differences between nominal religion and practicing religion do exist. The data included here relate to nominal religion as questions related to practice are not asked as part of the Australian census.

[iv] Low income measure captures persons who reported earning less than $399 a week. This figure was adjusted in 2001 and 2006 according the Consumer Price Index based on September each census year (ABS, 2015).

[v] No residential data is provided at this level.

[vi] To determine whether differences between the two sites are statistically significant, a dummy variable was added to the models (0= Brisbane, 1 = Sydney). The results suggest differences between sites are statistically significant.