

APPLYING SOCIAL NETWORK ANALYSIS TO THE STUDY OF REFUGEES

By

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CHAPTER 1

Introduction

By the end of 2020, the UNHCR estimated the number of forcibly displaced persons surpassed 80 million globally, of which 26.4 million were designated as refugees (UNHCR, 2021). As violent conflict, resource constraints, and climate disasters continue to drive increases in forced migration, it is of paramount importance to design immigration policy that facilitates the integration of refugees into new societies and communities (Evans and Fitzgerald, 2017). Under a human rights-based framework which prioritizes the rights and protections afforded to refugees, such policy should also take into consideration the possibility of refugee acculturation and potential challenges with inter-group relations (Gorlick, 2000). Informative empirical data are needed to develop policy that is sensitive to these characteristics of communities and refugee populations that contribute to integration outcomes.

Social network analysis (SNA) provides one such opportunity for generating data that enable social scientists and policy producers alike to better understand which factors contribute to better refugee integration outcomes from a relational perspective (Ager and Strang, 2008; Curi et al., 2019; Johnston et al., 2019). An SNA approach to studying refugee resettlement is particularly useful since it is ‘principally concerned with delineating structures of relationships and flows of activities’ (Wellman, 1979; 392). In this respect, social network analysis is neither spatially bounded nor static in approach. Through the use of SNA methods, scholars can examine how networks of individuals form, evolve, and even break down over time. These methods are especially well-

suited to studying refugees, a population that is known to experience a high degree of social change in often short periods of time (Lubbers et al., 2010).

Thus far, SNA application in the migration literature has typically focused upon the social networks of voluntary migrants, such as temporary or permanent migrants who seek out attractive labor markets abroad (Lubbers et al., 2010; Ryan et al., 2007; Ryan, 2011). These studies also tend to single out highly skilled migrants, who experience migration and resettlement in meaningfully different ways than seasonal labor migrants and forcibly displaced migrants (Patulny, 2015; Pedersen et al., 2008). The few social network studies which directly consider refugees rely on two main approaches. The first prevailing approach focuses on collecting and analyzing qualitative accounts of refugee social networks, using interviews, focus groups, and case studies to generate theory about refugees' social ties (see Ager and Strang, 2004; Johnston et al., 2019). In contrast, more recent efforts involve the development of agent-based models to predict integration prospects, though these studies are relatively underdeveloped and most have yet to directly test the implications of theory generated by these models using survey or observational data (see Curi et al., 2019). For a more nuanced understanding of integration prospects for refugees and the structures of their social networks, I argue that the burgeoning use of quantitative SNA approaches in tandem with granular observational data can generate meaningful findings which enrich both scholarly research on the topic of refugee integration and legislative policy which addresses immigration and support services for resettled refugees.

To these ends, this thesis principally demonstrates the value of social network modeling as an essential tool for answering pressing questions about refugee integration. Through quantitative

SNA approaches and the collection and analysis of observational data, scholars can better estimate access to social capital and related prospects for integration available to new refugee arrivals to an existing host community network. In the following section of this thesis, I review the literature on refugee integration with a particular focus on the characteristics of host communities and immigration policy which are expected to contribute to better immigration prospects. Synthesizing extant findings from SNA approaches to the study of migration, I demonstrate the dearth of attention paid to the social networks of refugees in this migration scholarship. Within the main body of the thesis, I expand upon my argument by using extant research to delineate expectations about the structure of refugee social networks as compared to the networks of other migrants. I then highlight the value of SNA methods for the study of refugees through a discussion of the types of research questions which may be answered through agent-based modeling and observational data collection, illustrating this with a simplified model demonstrating structural differences between refugee and highly-skilled migrant social networks. To conclude the paper, I suggest several methodological approaches to enhance our academic understanding of refugee social networks and to advance ethical immigration policy for refugees through the broader application of social network analysis to the study of refugee and host community ties.

CHAPTER 2

Refugee Integration in the Literature

A rich literature attempts to understand the processes of resettlement and integration underwent by immigrants who have left their homes, especially seeking to characterize the development of access to social capital in new settings, a crucial determinant of integration prospects (Ager and Strang, 2008; Krahn et al., 2012). Coleman defines social capital as a productive form of capital under which is made possible, “the achievement of certain ends that in its absence would not be possible” (1988: S98). As early as the 1960s, analysts studied the process of chain migration, paying careful attention to the role of family members and friends in securing resources, facilitating migration, gathering information, and other related activities which would later fall under this definition of social capital (MacDonald and MacDonald, 1964). The body of migration literature incorporates several methodological approaches to study this phenomenon and examines both the micro- and meso-level dynamics of migration, including more recent research using qualitative and quantitative SNA methods to understand how migrants develop social ties necessary for integration, or, what barriers prevent them from successfully doing so (Fasani et al., 2021; Ryan and D’Angelo, 2017; Strang and Ager, 2010). Understanding the structure, composition, and generation of social ties is essential for the design of policy that contributes to the successful integration of new refugees, rather than marginalizing and disadvantaging newcomers (Sheikh and Anderson, 2018).

Relationality is an essential component of the SNA approach which makes it uniquely well-suited to predict and test the factors which contribute to better or worse integration outcomes for refugees (Ryan and Mulholland, 2015). Integration is a function of the relationship between immigrants, host communities, and the set of policies governing the rights, rules, and resources that exist within host communities (Ager and Strang, 2008; Katz, 1975; Sheikh and Anderson, 2018). In the absence of such conditions that ensure the possibility of integration, migrants may engage in other strategies of acculturation, such as assimilation, separation, or marginalization to overcome barriers to participation and the construction of identity in the host society context (Berry, 1997). In reviewing the migration literature, I emphasize the key characteristics of host communities and immigration policies which drive improved integration outcomes for refugees. I then turn to the narrower literature on SNA approaches in the study of migration to describe what we know about the social networks of refugees and what gaps remain in our efforts to understand the integration of refugees into host community social networks.

2.1 Determinants of Integration Prospects for Refugees

Refugees arrive to new host communities with a range of skill levels, educational backgrounds, language proficiencies, and cultural identities (Bernstein, 2018). Research suggests that refugees integrate over time as a shared function of assimilating according to characteristics which require them to share more in common with host community members – such as language competency – and maintaining differences which allow them to develop connections with other immigrant or native-born community members sharing these characteristics – such as religious affiliation (Capps et al., 2015). Gaining strong language skills improves integration outcomes for refugees by increasing a sense of belonging in the community, expanding access to resources and social

capital, and opening up opportunities in the host community (Evans and Fitzgerald, 2017). Beyond language acquisition, access to meaningful employment commensurate with skill level contributes to a sense of belonging for refugees, with recent data reflecting that there are proportionately more male refugees in the U.S. labor force than native-born men (Capps et al., 2015). In line with other immigrant communities, refugees are more likely than the native-born population to start their own businesses, which can serve as another point of social connection and economic integration (Kallick and Mathema, 2016).

Importantly, maintaining relationships and interacting with others who share aspects of a refugee's identity also contributes to integration outcomes (Capps et al., 2015). Whether through attending religious services or participating in co-ethnic or co-national community groups, refugees can experience higher integration prospects within their host communities as a result of these ties. Forming connections over a shared identity and context can enable refugees to maintain some continuity throughout the identity renegotiation process that takes place during resettlement, easing the process of integrating into an unfamiliar and sometimes hostile new home (Strang and Ager, 2010). Findings from studies of highly skilled migrants suggest that connections built with host community peers over shared professions or educational backgrounds may also contribute to better integration prospects, which ostensibly could also apply for refugees in new host communities (Ryan et al., 2007). Beyond these characteristics, refugee health, including experiences of trauma from persecution, age, gender, ethnic and national origin, and other characteristics all contribute to individual prospects for integration or risk of negative acculturation, necessitating a more informed understanding of how these traits interact (Bernstein and DuBois, 2018). While the experiences and attributes of individual refugees matter for determining

integration prospects, such characteristics can be transformed into meaningful opportunities or potential barriers to integration on the basis of how they interact with the features of a host community and its immigration policies.

2.1.1 Host Community Dynamics

Integration can be framed as a two-way process of change (Ager and Strang, 2008). This two-way process refers not only to the participation of refugees in a new community, but also the host community embracing a “process of mutual accommodation” to welcome refugees (Ager and Strang, 2008: 177). At the most basic level, members of the host community enhance the likelihood of integration by not engaging in conflict with and being tolerant of different groups (Ager and Strang, 2004). However, achieving meaningful integration requires more costly and intensive investment from the host community. Refugees express that a sense of ‘belonging’ is a key marker of being a part of an integrated community, with this belonging derived from a mixture of social bonds and bridges (Putnam, 1993). Each of these connections require a degree of ‘mixing’ between the host community and the refugee population. Homophily, which refers to the tendency of individuals to associate with those like them, can be a barrier to integration (McPherson et al., 2001). Highly homophilic host communities lack this necessary ‘mixing’ quality that enhances prospects of refugee integration because host community members maintain close social ties with people who they perceive to be already like themselves. To begin to overcome host community homophily, host community members can facilitate the development of individual social bonds by recognizing and acting on individual characteristics shared with refugees – such as actively including refugees in co-religious spaces or inviting refugee children and their parents to join in playdates (Ager and Strang, 2008). These individual bonding ties creating meaningful

interpersonal connections that can alleviate some fears of refugee acculturation, yet they are insufficient to guarantee the successful complete integration of refugees within a host community (Bernstein and DuBois, 2018). In this matter, social bridges are the considerably more costly and valuable connections to make.

Social bridges enable social harmony and encourage refugee participation in the host society (Refugee Council, 1997). Bridges enable different groups to transmit information from one group to another – whether in the more abstract form of community norms and values, or in the more concrete form of knowledge about events in the community. Whether information is transmitted via a social bridge and how much information is transmitted via bridge nodes is entirely dependent upon the process of generating cross-group social ties within a host community (Ward et al., 2011). Host community members must actively work to prevent the social marginalization of refugees by breaking down socioeconomic, cultural, and linguistic obstacles to integration and forming these social bridges on the basis of similarities between refugees and their host communities (Phillimore, 2010). Systemic barriers to participation, including linguistic and cultural differences, a lack of familiarity with a new legal system, and limited knowledge of host community norms must be addressed by the host community in order to integrate refugees (Capps et al., 2015). Policy-making is the central tool at the disposal of host communities to overcome these challenges to integration.

2.1.2 Policy Prescriptions for Integration

Before refugees even arrive in new host communities, policy decisions begin to alter their prospects for integration. While refugee resettlement is broadly governed by the United Nations High Commissioner for Refugees (UNHCR), individual member states maintain a high degree of

autonomy over their respective refugee resettlement programs (UNHCR, 2020). This results in a great deal of variation in the policy decisions impacting refugees, though they all pass through the same overarching system. For example, while the United States employs a tripartite selection scheme to identify which refugees are the best candidates for resettlement on the basis of UNHCR referrals, humanitarian concern, and family reunification, Germany centrally prioritizes the admission of refugees who are most at risk in countries of first asylum, where refugees can sometimes face the same persecution that they experienced at home (UNHCR, 2020). Some member states are open to accepting refugees from all over the world, while others have developed resettlement programs for specific ethnic or national group members on the basis of foreign policy concerns (Refugee Council, 1997). These choices result in considerable variation in the number of refugees resettled within each state, as well as the characteristics and backgrounds of these refugees. In addition to selection policies, UN member states which participate in refugee resettlement maintain different resettlement policies at home, resulting in wide variation among refugee integration outcomes. Under the New Zealand Refugee Resettlement Strategy (NZRRS), refugees are expected to achieve self-sufficiency, housing, education, health, and well-being through the assistance of a six-week residential program at the country's main refugee resettlement center, with resources that orient refugees for life in a completely new context (Immigration New Zealand, 2021). While this policy structure is designed to enhance integration prospects and closely follows the UNHCR mandate governing the rights of refugees, high levels of variation across the policy decisions of countries which operate resettlement programs make it difficult to effectively evaluate which policy prescriptions best strengthen opportunities for refugees to integrate (UNHCR, 2020).

Facilitating access to public services – including translators, language classes, healthcare, education, and transportation – is essential for host communities to provide the conditions for refugee well-being, reinforcing that policy is a key tool for the enhancement of refugee integration (Patulny, 2015; Sheikh and Anderson, 2018). Resettlement programs such as the NZRRS offer opportunities for refugees to encounter unfamiliar experiences from their host contexts that could be otherwise overwhelming or lead to acculturation without ready access to supportive social ties. The Swedish Migration Agency similarly recognizes the need for a supportive structure to facilitate a smoother transition for refugees into the host community, offering Swedish language instruction and public service information resources to new arrivals and a programmatic introduction to the country before refugees even embark upon their journeys to the country (UNHCR, 2020). However, these successful policies coexist with lingering challenges. Institutional policies that address the transfer of educational credits from a country of origin to the host community context are still largely underdeveloped, resulting in underemployment for many qualified refugees in the labor market (Evans and Fitzgerald, 2017; Krahn et al., 2000). Additionally, while many resettlement policies emphasize early employment as a key signifier of integration, underemployment counteracts many of the positive effects of obtaining a steady job, suggesting that employment status may not be the most appropriate indicator for integration (Capps et al., 2015). As refugees come from increasingly diverse nationalities, policy approaches must also take into account how these differences result in unique needs for refugee populations from different contexts. Refugees may have very low language skills, limited educational experience, and low literacy, but they may also possess some or all of these skills upon arrival (Capps et al., 2015; Chiswick, 1979; Chiswick and DebBurman, 2004). Policy responses should not take a one-size-fits-all approach to provide resources to refugees, but rather adopt a more

flexible perspective that takes into account the natural variation among refugees and offers resources accordingly to optimize the likelihood of successful integration.

2.2 Applications of SNA Methods to the Study of Migration

Community networks are dynamic across space and time. Networks evolve through the development of relationships among community members, the entrance of new members to the community, the death or other departure of members of the network, or even the ending of previously developed social relationships (Ward et al., 2011). The entrance of new members provides a unique opportunity to study the dynamic structure of a community network. New arrivals must forge connections with existing community members, who already maintain a rich array of social ties, otherwise they risk treading deep waters alone with little prospect for aid. This aid comes in the form of social capital. When seeking assistance with childcare, knowledge about job opportunities, or even advice to obtain a driver's license, new community members must forge both formal and informal social connections to develop access to various forms of social capital (Coleman, 1988).

The need for connection and the development of social capital is especially inescapable for refugees. Facing persecution and forced migration, often resulting in being resettled far from existing connections at the will of a disconnected bureaucracy, refugees experience an almost complete shearing of many existing social ties and undergo a concurrent, complex process of identity renegotiation as they develop a life in a completely new setting (Malkki, 1992). Faced with both a physical and metaphorical severing of ties to identity and belonging, refugees are especially vulnerable to experiencing psychological trauma and acculturation within their

communities of resettlement (Phillimore, 2010). Bonding and bridging social ties enable refugees the opportunity to successfully integrate into host communities and access a wide range of benefits from the social capital they accumulate. Before such bonding and bridging can take place, however, barriers to connection must be overcome. In this section, I first review the broader migration literature on social network analysis, offering a brief review of scholarly findings about the structures and qualities of migrant social networks, before turning to a more narrow analysis of the limited attention given to the study of refugees using SNA methods.

2.2.1 Findings of SNA Approaches

Emerging originally out of the sociometry scholarship in social psychology which conceptualized the structures of small groups and the interactions of members of such groups, social network analysis has now developed into an abundant collection of works addressing topics ranging from social mobility within small communities to the mapping of international trade routes (Scott, 1988). SNA methods first appeared in the migration literature in the early 1960s, as sociologists began to grapple with post-World War II population changes. Rural to urban migration best described these demographic shifts, with this movement into cities resulting in the development of ethnic enclaves and neighborhoods marked by cultural homogeneity (MacDonald and MacDonald, 1962). These early studies examined the role of kinship as a determinant of migration to cities, how relationships with kinsmen shifted over the course of migration, and the evolution of kinship relationships during assimilation (Tilly and Harold, 1967). Interest in the bonds between generations of immigrants through patterns of chain migration also motivated much of this early literature (MacDonald and MacDonald, 1964). Related efforts in the fields of social psychology, anthropology, and ethnography emerged over the course of the 1970s and explored greater

variation in methodological inquiry in the study of migrant social networks (Mitchell, 1974; Mueller, 1980; Ross and Weisner, 1977). Granovetter's influential research on the strength of 'weak' social ties also emerged at this time, presenting new opportunities for scholars to address more nuanced questions about the structures of migrant social networks and the role of social ties (1973).

In subsequent years, SNA methods have offered a uniquely interdisciplinary approach for studying migration, and more specifically, the integration of migrants within host community networks. Determinants of integration begin outside of the host community. Decisions to migrate in themselves help determine the likelihood of immigrant integration into new environments. Information cascades within the social networks of prospective migrants demonstrably influence the decisions individuals make about whether or not to leave home (Epstein, 2002). Amit and Riss shown this more concretely through a case analysis of the decision-making processes of North American immigrants moving to Israel (2007). Jewish and Israeli organizations were able to effectively persuade individuals to migrate because they conferred information about support and resources available to immigrants by referencing a shared religious identity – easing potential concerns about “not fitting in” or lacking access to tools that would enable successful integration (Amit and Riss, 2007; Katz, 1975). Social network analysis is also inherently related to the concept of chain migration. Research into communities with high levels of chain migration offers considerable evidence for the role of social networks in determining migration destinations and in preserving flexible ties across contexts through information cascades, and often also through monetary remittances (Banerjee, 1983; Ryan, 2011; Shah and Menon, 1999). Chain migration ties provide an important source of flexibility for migrants who engage in an exchange of

communication and resources with both their home communities and hosting communities. These flexible ties are especially robust in communities where temporary labor migration is the dominant strategy for emigration (Poros, 2001).

While some scholars have focused more closely on immigrants' social networks before they make the decision to migrate, others have paid more attention to the social networks that migrants construct after they immigrate, as well as how those social networks contribute to their prospects for integration. Scholars have used these methods to predict the mental health outcomes of immigrants on the basis of their access to bonding and bridging capital in the host community network (Hurtado-de-Mendoza et al., 2016; Kim et al., 2012; Vega et al., 1991). Other work examines the economic and educational prospects for refugees on the basis of their social ties, finding that access to social capital through community ties is essential to secure these benefits (Chiswick and DebBurman, 2004; Fasani et al., 2021; Johnston et al., 2019; Krahn et al., 2000). How migrants develop access to social capital – and especially whether this access comes from social ties to other migrants or native-born community members – gives rise to another body of research within the literature (Boyd, 1989; Lesger et al., 2002; Lubbers et al., 2010). Experimental data further enhance prospects for learning about the structures of migrant social networks, and especially how information and norms flow through these networks (Batista et al., 2021). Public perceptions of immigrants also contribute to how warmly they are received by host communities. As immigrants form social networks during the process of migration, host communities respond differently to migrants depending on who migrates and how they are expected to impact the economic and cultural context in which they resettle (Guerra, 2021; Sandell, 2008). Technological innovations have further enabled academics to make use of the rich data available on social media,

creating opportunities for migration scholars to study online extremism and antagonistic perceptions of migrants through online social networks (Tas et al., 2012). Forthcoming research examines the effects of experimental interventions upon host community attitudes toward refugees while collecting social network data on community participants, offering another opportunity to analyze the interactions of SNA and migration (Larson and Lewis, 2021).

2.2.2 Underrepresentation of Refugees in the Literature

Social network approaches have contributed to valuable findings in the migration literature about the integration prospects of migrants, what kind of ties migrants form with host communities and maintain with their home communities, how host communities perceive newfound arrivals, and other related contributions. Yet, these studies largely address the social networks of voluntary labor migrants who engage in migration as a strategy to access favorable labor markets. Relatively few SNA studies within the migration literature focus specifically on the social networks of refugees. Much of this limited body of work utilizes interviews and focus groups to construct qualitative accounts of the social networks, social capital, and integration outcomes for refugees (Ager and Strang, 2004; D'Angelo, 2021; Johnston et al., 2019). Ager and Strang examine local understandings of the concept of integration and factors expected to shape integration at the local context to develop a framework to understand refugee integration in Islington and Glasgow – one community with a significant history of self-settlement by refugees, and the other without a history of refugee resettlement (2004). The authors generate a framework for understanding integration through the domains of social connection, personal safety and stability, rights, facilitating factors, and housing, employment, education and health. This framework offers fruitful opportunities to compare refugee integration across other contexts with a common set of criteria to examine.

Through interviews with refugees crossing the Mediterranean, D'Angelo expands efforts to study refugee integration by incorporating both local and transnational ties into the examination of resettlement 'journeys' (2021). Framing refugee migration as an agentic, rather than passive process, D'Angelo draws attention to the fluid shaping and reshaping of refugee social networks across space and time. Johnston and colleagues approach the study of refugee social networks from the perspective of policy and humanitarian response (2019). Their analysis of focus group interviews with Yemeni and Sudanese refugees and asylum seekers in Jordan centers on the development of bonding, bridging, and linking social capital – the latter referring to the relationships that refugees and asylum seekers forge with humanitarian organizations in their resettlement community. SNA methods enable not only the examination of factors which contribute to integration prospects, but also the ties that form between different types of actors, including both host community members and organizations within the host community. For refugees, who are supported under the auspices of both international and domestic organizations governing resettlement, this research addresses a crucial interaction which determines how well refugees are able to integrate into their host communities. This work further offers policy suggestions that can be implemented by refugee resettlement organizations and other community partners that enter into refugee social networks.

Quantitative SNA studies of refugee resettlement are more limited. Curi, Nikolopoulos, and Fernandes de Mello Araujo construct a stylized network model for the integration of refugees (2019). This model makes use of weighted local searches and set population parameters for the language skills and religiosity of the host community and refugees to generate social ties. Weighted local searches generate variation in the strength of ties between individuals on the basis of their

homophily across these two traits. More heavily weighted links act as main highways for the transmission of information within clusters of the social network, while less heavily weighted links act as bridges between clusters. In the case of their theoretical model, bridges most often appear between refugees and host community members who are homophilic with respect to the characteristics of language skills or degree of religiosity. Their model also offers the benefit of demonstrating network flexibility over time. Re-wiring rules enable members of the network to form and also break social ties over time, reflecting the dynamic nature of social networks and closely approximating expectations for how the social networks of communities evolve as outsiders enter into the network. This model offers a unique theoretical contribution to the use of quantitative SNA methods for studying refugee social networks, but requires more complexity to adequately incorporate other main characteristics that matter for refugee integration, such as the educational backgrounds or ethnic identity of refugees and members of their host communities (Phillimore, 2010; Sheikh and Anderson, 2018). These additions in future research could generate productive ways to visualize refugee social networks that more closely reflect what these networks look like in reality.

Combining quantitative modeling with observational data and even experimental research can offer more effective ways for migration scholars to understand the social networks of refugees. In tandem with game theoretical modeling and spatial bargaining models, social network analysis has been used to predict the economic influence of Venezuelan refugees and asylum seekers in Peru, one of the main receiving states for this refugee diaspora (Guerra, 2021). In contrast with this focus on the effect of refugees on hosting communities, Lamba and Krahn use survey data from refugees resettled in Canada to determine the structure and size of refugees' social networks and to identify

the amount of social capital accessible to Canadian refugees in host communities (2003). Finding that extended family networks play an essential role in the initial development of access to social capital, with refugees developing more extensive extra-familial networks over time, this scholarship reflects the dynamic nature of refugee social networks in this context. The combination of modeling approaches and observational data offers opportunities for the rich analysis of refugee integration in local contexts, but those contexts are often limited to Western states with large refugee resettlement programs, suggesting that scholars should think more critically about how these findings may or may not apply in settings where refugee resettlement is more informal or governed by non-governmental organizations. Examining data from the 2006 Australian Bureau of Statistics General Social Survey, Patulny finds that refugees maintain less access than both skilled and long-term temporary migrants to bonding and bridging social capital within Australian communities (2015). Conducting regression analyses on this data, Patulny determines that there are meaningful differences in the opportunities for refugees to develop social capital in comparison to other forms of migrants. This work emphasizes the need to think critically about modeling choices for migrant and refugee social networks, as different processes and factors govern the integration prospects of these disparate groups.

CHAPTER 3

Theoretical Value of SNA Approaches to the Study of Refugees

Social network analysis offers valuable insight into the structure of relational ties within communities. Novel applications of SNA methods within political and policy networks, social movements, religious networks, criminality and terrorism, bureaucracies, and elsewhere offer great promise for understanding the important role that relationships play in communal settings (Scott, 1988). Structures comprised of relations between individual social actors present the opportunities and constraints that shape the economic, political, and social behavior of actors within the network (Ward et al., 2011). Rather than approaching relationships between actors as static and unchanging, SNA methods enable the dynamic study of forming, changing, and breaking relational ties across time and space (Ryan and Mulholland, 2015). The application of social network analysis to the study of migration offers several key benefits to enhance a scholarly understanding of the choices and constraints facing migrants at home and in the communities where they resettle (MacDonald and MacDonald, 1964). SNA methods are flexible enough to enable scholars to incorporate not only the characteristics of migrants themselves when considering which factors influence immigration, but also to consider host community dynamics and the set of policy choices governing immigration – which also contribute to integration prospects (Ward et al., 2011). Yet, the application of social network analysis to the study of migration should not view all migrants as equal. Migration may be voluntary or forced, temporary or permanent, internal or international. Social network approaches to the study of

migration must be sensitive to how these differences impact the individuals and ties that can be studied within migrant networks.

3.1 Essential Characteristics of Refugee Social Networks

Ward, Stovel, and Sacks define social network analysis as “the study of links between nodes” (2011). In the migration literature, nodes typically refer to persons, or sometimes also organizations, while links represent the forms of connections or flows between nodes. These links may take the form of friendships, kinships, working relationships, or resources and information transmission. For the study of refugee social networks, refugees are the nodes of greatest interest, while other nodes in the network may be their kin and peers, members of the host community where they are resettled, or sometimes the organizations that they interact with for support services (Johnston et al., 2019; Lamba and Krahn, 2003). Links between refugees and other members of their social networks are most often characterized as relationships, but these relationships may be formal or informal. Formal relationships may include ties on the basis of organizational membership or employment status, while informal relationships include interpersonal ties which may range from workout buddies and daycare groups to familial bonds and apartment complex neighbors (Li et al., 2015). Nodes and links are the two essential traits that comprise refugee social networks, but scholars generally elect to gather more information about refugee social networks, including supplemental data about the nodes in the network and composition of links in the network to answer more specific research questions. While all migrant social networks are comprised of node and link structures, there are meaningful differences between the composition of refugee social networks and other forms of migrant networks. These differences inform how

scholars should think about the construction and evolution of refugee social networks, as well as the choice of research methodologies employed to study specific attributes of these networks.

3.1.1 Distinguishing between Refugees and Voluntary Migrants

Borne out of the need to systematically respond to large numbers of European citizens driven to seek safety from the destruction of World War II, the United Nations 1951 Convention Relating to the Status of Refugees defines the individuals eligible to be classified and protected as refugees as follows:

As a result of events occurring before 1 January 1951 and owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it. (UNHCR, 1951: 14)

In subsequent years, the 1967 Protocol Relating to the Status of Refugees eliminated spatial and temporal restrictions of the original 1951 Convention, resulting in the understanding of refugees that migration scholars, international law practitioners, governments, and non-governmental organizations alike employ today (UNHCR, 1967). Refugees definitionally participate as involuntary migration when they are resettled in host communities. In contrast, voluntary migrants maintain greater agency in the decision to migrate. While they may face economic, social, political, and security pressures to move, these individuals make the choice to leave home and thereby lack access to the rights and protections afforded to refugees (Pedersen et al., 2008). Voluntary migrants may engage in temporary migration, such as seasonal labor migration, or they may choose to immigrate more permanently into a host community (Mueller, 1982; Ryan et al., 2007). Notably,

individuals must cross international borders to be designated as refugees, while voluntary migrants may move internationally or within their countries of origin (Otoiu et al., 2014; Pitoski et al., 2021).

Considering these definitional differences between refugees and voluntary migrants, social network scholarship must take into account how these differences shape the construction and evolution of refugee social networks. Studies of chain migration finely illustrate this point. Social networks constructed around the process of chain migration are transnational in nature and result in the flexible transmission of information and other resources across borders (Banerjee, 1983; MacDonald and MacDonald, 1964; Shah and Menon, 1999). Immigrants who move seasonally participate more extensively in two-way transnational relationships, while those who move on a more permanent basis through the process of chain migration construct more ties in host community settings, retaining only the transnational relationships which provide significant meaning and value to their lives (Cachia and Jariego, 2018; Munshi, 2020; Verdery et al., 2018). Voluntary migrants also generally maintain greater control over where they migrate to than refugees. Refugees face resettlement determined by bureaucracies, while voluntary migrants often have a wider number of choices about where to move (Pedersen et al., 2008). The presence of kinship networks in migration destinations drives one aspect of the migration decision-making process for voluntary migrants, and also characterizes the social networks and access to social capital available to voluntary migrants once they move (Boyd, 1989). While refugees often lose most symbols of status and class during the processes which immediately precede seeking refuge, including conflict and persecution, voluntary migrants often maintain greater access to their socioeconomic and class status symbols and resources (Patulny, 2015). These factors point to conclusion that treating the social networks of highly skilled economic migrants in Spain as equal

to the social networks of traumatized Syrian refugees living in Jordan would fail to capture the important structural characteristics of networks that depend upon how and why these individuals migrate, the level of choice they receive over where to go, and types of local and transnational ties they can access for social capital. Instead, scholars interested in the application of social network analysis methods to the study of refugees should take into consideration how determinants of refugee status alter potential social connections that refugees can forge when designing research questions and SNA methodologies for the study of refugee social networks.

3.1.2 Distinguishing between Refugees, IDPs, and Asylum Seekers

Refugees, internally displaced persons (IDPs), and asylum-seekers each face constraints that result in the process of involuntary migration. International law defines an asylum seeker as a person who seeks out the protections afforded to someone with refugee status, but whose refugee claim has not yet been assessed (Chin and Cortes, 2015). Unlike refugees, while asylum seekers also flee from fears of persecution and seek aid by submitting their claims to a host country government, asylum seekers can avoid the process of registering with the UNHCR to be resettled. However, this opportunity to directly make status claims also opens up considerable vulnerability. Asylum seekers face arduous processes to determine whether they meet the criteria to gain either temporary protected status, another form of long-term visa, or are accepted on the merits of their claim. These outcomes may or may not offer future citizenship to the asylum seeker and the protections and rights afforded to refugees – chief among those the principle of *non-refoulement*, which protects individuals from being returned to places where they have a “well-founded fear of being persecuted” (UNHCR, 1951). In contrast, internally displaced persons often face pressures to move from conflict or persecution, but do not have the opportunity to appeal to other states for refugee or

asylum. Internally displaced persons may refer to “people uprooted by conflict, violence, and persecution, that is, people who would be considered refugees if they crossed a border,” or the term may capture a broader concept “to encompass the millions more persons uprooted by disasters and development projects” (Mooney, 2005: 9). Each group faces unique pressures to flee home, but for reasons of opportunity and access, makes different choices about where to migrate.

All groups face unique vulnerabilities on the basis of this precarious status, but their possible social network structures vary widely. Refugees are often the most spatially distant from their homes, constraining their abilities to maintain social ties with friends and family who were unable or unwilling to join them abroad (Phillimore, 2010). This results in refugees participating in the construction of social networks almost from scratch in their host community settings, with these networks evolving significantly from the moment that refugees are initially resettled in host community contexts (Lamba and Krahn, 2003). IDPs and asylum seekers may or may not be able to preserve ties to their networks from home because they migrate shorter distances and may migrate on a less permanent basis, but they still face a process of social network construction that is often incredibly dynamic due to the lack of stability and permanent home that these individuals face (Ryan, 2011). Main differences between refugees, IDPs, and asylum seekers’ social networks stem from the variation in migration destinations for each group. While all three forms of involuntary migration create constraints which may cause the partial or total loss of social capital and social ties to a network at home, the types of networks constructed during and after migration vary considerably among the three groups, especially across time (Ryan and D’Angelo, 2017). In the study of social networks constructed by involuntary migrants, it is essential to critically evaluate the degree to which these groups are able to maintain ties to home because these ties can

determine what social capital migrants can avail themselves of when trying to secure jobs, housing, healthcare, information, and other types of resources in the communities where they resettle on a temporary or more permanent basis (Tilly, 2007; Tilly and Brown, 1967; Verdery et al., 2018).

3.2 Expected Contributions of SNA Methods

Studies of the social networks of refugees thus far have generated valuable knowledge about the kinds of ties and social capital accessible to refugees after resettlement (Lamba and Krahn, 2003; Patulny, 2015). Another main offshoot of the literature focuses on answering questions about the types of factors which facilitate better integration prospects for refugees in host communities or result in the acculturation of refugees (Chiswick and DebBurman, 2004; Fasani et al., 2021; Kim et al., 2012; Krahn et al., 2000; Phillimore, 2010). Scholars may seek to develop more precise answers to these broad questions about refugee network structures and refugee integration using SNA methodologies more specifically informed by the conditions and choices that shape refugees' daily lives and social ties. However, as this literature develops, a wider range of questions can be addressed through network scholarship. Many specific questions about the structures of refugee social networks and how these structures influence the political, economic, and social behavior of refugees in host communities also remain. Political participation for refugees is a unique outlet to explore, since unlike many other types of migrants, resettlement programs offer refugees citizenship and the ticket to political participation. Do refugees turn out for protests, elections, or community meetings? How do these choices reflect refugee experiences carried over from in their homes and the opportunities introduced by the structure of social networks that they construct in their host communities? The distinction between refugees and other migrants in this context makes

questions about political participation particularly interesting and relevant for studies that make use of SNA methods.

In terms of economic behaviors, the developing SNA literature on refugees should consider addressing some of the questions that have been applied to the study of highly skilled migrants. How do refugees accumulate economic social capital that enables them to secure employment, housing, and other symbols of material economic well-being? Refugees face systemic underemployment due to challenges with transferring work accreditation internationally, but how do these obstacles contribute to refugee entrepreneurial activity (Krahn et al., 2000)? Limitations of the job market may contribute to more refugees starting their own businesses or switching career fields when they resettle, once they develop access to the social capital to do so. Studying refugee economic activity offers considerable benefits to policymakers and organizations serving refugees, since employment is often thought of as one of the main signifiers of successful integration (Evans and Fitzgerald, 2017). In addition to studying economic behaviors, scholars can use SNA methods to examine the social behaviors of refugees. Individuals join organizations, associate with new informal ties, and participate in social activities, among other choices, comprising the set of social behaviors that refugees carry out in the host community setting. How likely are refugees to associate with individuals who share similar traits to themselves in their host community environment? Does homophily with respect to one or two traits create sufficient opportunities for social bridging and the development of social capital, or is a high degree of homophily required for these connections to be made (McPherson et al., 2001)? These questions address a very limited portion of the potential uses of SNA methods to study refugees, and further efforts should consider

the potential application of SNA methods in the analysis of refugee social networks as an essential tool for a wide range of research questions.

3.2.1 Moving toward a Richer Understanding of Integration

This analysis focuses specifically on the merits of SNA approaches to studying the integration prospects of refugees, although SNA methods can be used to address research questions from a much broader spectrum of topics. Although these other types of questions are methodologically interesting and deserve much further study, I make this choice to narrow my analysis and try to validate my modeling choices with the existing literature on refugee integration. This rich literature provides a foundation for thinking about the components which should be incorporated into models of refugee social networks and refugee resettlement. Furthermore, while scholars have studied refugee integration and the characteristics that enhance or inhibit integration prospects for decades, there are still many remaining questions to be addressed on this topic (Phillimore, 2010). Several aspects of the integration and acculturation processes still underexplored in the context of social network analysis, including research examining how the structures of refugee social networks can help make refugees more resilient in the face of risk factors for acculturation. With refugee social networks mapped out in relatively few contexts, chiefly in wealthier Western countries, there is a strong need for more empirical and modeling efforts addressing the structures of refugee social networks (Lamba and Krahn, 2003). The main theoretical model of refugee social networks in the literature is also principally concerned with refugee integration (Curi et al., 2019). Scholarly work linking the study of refugee migration with social network analysis and agent-based modeling is minimal, providing a fruitful foundation for further work. These factors make refugee integration a strong choice for basic agent-based modelling.

3.3 An Agent-Based Model of Refugee Integration

Social network analysis offers meaningful opportunities to explore the structures of the relationships that refugees construct in host communities. Agent-based models can offer valuable theoretical contributions and general questions that scholars may elect to study further with additional, complementary SNA methods (Bilecen et al., 2018). Agent-based modeling chiefly complements SNA methods by overcoming empirical biases in the collection of data on social networks by generating more comprehensive pictures of the node-ties landscape of complex social networks (Will et al., 2020). Coupling the theory-driven benefits of agent-based modeling with the empirically-driven efforts to map social networks opens up new possibilities for research that would not be possible through the use of SNA methods or agent-based modeling alone.

3.3.1 Parameters of the Model

In this simple agent-based model, nodes are refugees and native-born host community members. Refugees are colored as red nodes, while host community members are displayed as blue nodes. Ties form between nodes on the basis of a homophily rule. In the low homophily social network, ties form between nodes with a probability of 0.5 if they share a common trait, and with a probability of 0.5 if they do not share a trait. In the high homophily social network, ties forms between nodes with a probability of 0.9 if they share a common trait, and with a probability of 0.1 if they do not share a trait. More homophilic social networks generally reflect homogeneity across a number of demographic characteristics (McPherson et al., 2001). Rather than modeling a specific integration-influencing characteristic, instead I introduce random variation in the network so that 10 percent of the network shares characteristic “R.” Refugees are more likely to be of type “R” than native-born members of the community in order to capture potential differences between the

refugee and native-born population. Bridging ties between “R” types and non-“R” types are represented in gold in each network. I model both low and high homophily networks to reflect differences in the emergence of bridging ties in two types of communities. In the less homophilic community, fewer bridging ties form between network nodes that do not share this trait, thereby also resulting in fewer bridging ties between refugees and native-born community members because of the distribution of the trait determining integration prospects throughout the population.

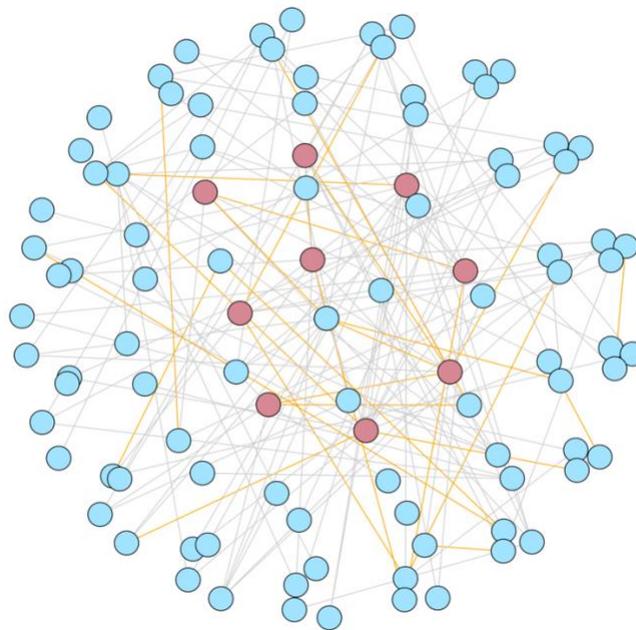


Figure 3.1: Low Homophily Agent-Based Model of a Refugee Social Network

In the low homophily network, many bridging ties form between refugees and non-refugees. Bridging ties also commonly appear between refugees who do not share the “R” trait and non-refugees who do not share the “R” trait. This “R” trait could proxy for ethnic minority or religious minority status, both of which influence integration outcomes and could be relevant to the analysis

of the traits of refugees entering into a host community (Larson and Lewis, 2016; MacDonald and MacDonald, 1964; Pedersen et al., 2008).

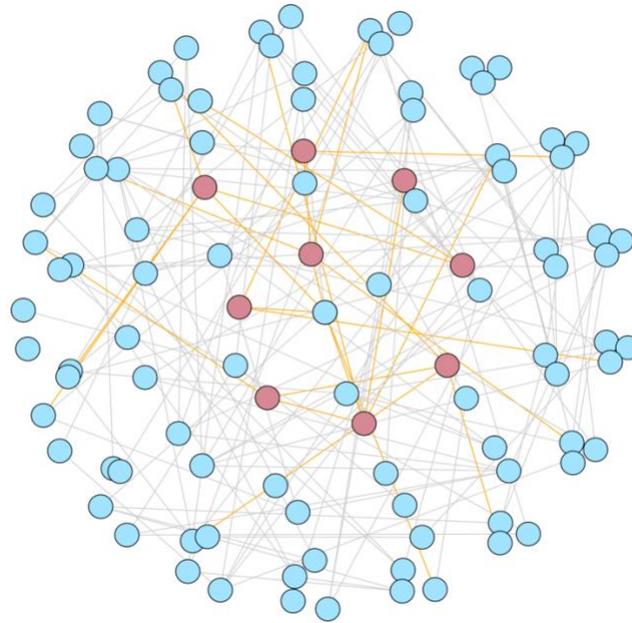


Figure 3.2: High Homophily Agent-Based Model of a Refugee Social Network

Fewer bridging social ties emerge in the high homophily network. Ties are less likely to cross between refugees and non-refugees in this community, in line with the modeling parameters which make refugees more likely to possess the “R” trait than the average community member. This illustration reflects how community homogeneity significantly influences the outcomes of refugee integration (Ager and Strang, 2008; McPherson et al., 2001).

3.3.2 Main Findings from the Model

This model offers some descriptive information about the process of integration in low and high homophily networks with refugees. Across both models, closeness centrality is extremely low. Closeness centrality is marginally higher in the high homophily social network, suggesting that

the average path length between nodes in the network is longer; however, this isn't an especially useful measure for this network structure because so many of the node vertices do not have direct pathways to each other. Eigenvector centrality is therefore a more appropriate centrality measure for these social networks. Mean eigenvector centrality in the low homophily network is 0.17, while this value rises to 0.19 for the high homophily network. The increase in the average eigenvector centrality suggests that nodes are on average more central in the high homophily network. Taking into consideration how homophily ties influence the types of connections that are made in social networks, this finding is not surprising (McPherson et al., 2001). Turning to measures of node connectedness, the low homophily network has a higher level of average transitivity. Referring to the extent to which relations between nodes in a network are connected by an edge, transitivity provides a useful measure for how cliques emerge in a social network. The higher level of transitivity in the low homophily network interestingly suggests that more cliquish ties emerge when relationships in the network are more heterogeneous. This result deserves more attention in the model and should also be studied in the context of the real world social networks of refugees.

In order to make this model more useful in the future, additional modeling parameters to change the rules for creating and breaking social ties over time would enhance knowledge of the dynamic nature of refugee social networks. Static network modeling can help generate research questions and theoretical contributions, but fail to capture the complex evolution of social networks in real time. Other refinements which would be valuable for building upon this simple model include adding rules that weight the edges between nodes in the network. In the Curi et al. model of refugee integration, edge weighting rules enable nodes to selectively strengthen their links based on homophily across the traits of religiosity and language skills (2019). Introducing additional

characteristics that determine integration prospects, such as the ethnic demographics, educational backgrounds, and career fields of network members could also enhance this basic modeling effort.

CHAPTER 4

Conclusions

This thesis explores the value of social network analysis approaches to the study of refugee integration and social networks. Through a basic agent-based modeling approach and an extensive review of the literature on migration, I draw support for the argument that quantitative network modeling and the application of additional social network methods will enhance a scholarly understanding of both refugee social network structures and integration prospects. Factors that contribute to integration are demonstrated to also contribute to acculturative strategies – but social network structures are a key determinant of the effects of these characteristics. Noting this apparent puzzle in the literature, I identify potential research questions about refugees which would benefit from the methods and approaches of social network analysis. Notably, there are a few key innovations which could enhance these efforts in future work. I conclude the paper with suggestions for future research methods and agendas, as well as a brief examination of why this work constitutes an important step in the policymaking process toward developing more equitable, human rights-based immigration policy.

4.1 Innovations for Future Research Agendas

Social network analysis of refugees and their integration into host communities suffers from limited academic attention thus far. However, extant research offers a promising foundation for future inquiry. To further advance our understanding of refugee social networks and the integration of refugees in host communities, additional modeling efforts and data collection strategies are

essential. The Curi et al. model of refugee integration offers one such foundation upon which future modeling efforts can build (2019). By incorporating more of the findings from the migration literature about the factors which contribute most to integration outcomes, including the educational background of network members, ethnic demographics in the host community, and other characteristics which enhance or inhibit integration prospects, research building upon this model can generate valuable theoretical contributions to the study of refugee social networks (Phillimore, 2010). Theories developed from such modeling approaches could be translated into efforts to broaden the scope of refugee social networks addressed in the literature. To this end, it would be valuable to begin efforts to understand whether meaningful analysis of transnational refugee trust networks should also incorporate individuals who have remained at home or in refugee camps and the international organizations that facilitated the original resettlement of refugees, or if the shearing of relationships is complete enough that refugees obtain the vast majority of their social capital from connections forged within the host community environment (D'Angelo, 2021; Tilly, 2007; Verdery et al., 2018). This requires the collection of rich qualitative data from interviews and focus group sessions, as well as network survey data.

The interdisciplinarity of social network analysis makes this approach uniquely well-suited for mixed methods research. Scholars who are interested in characterizing the dynamic evolution of formal and informal refugee networks should consider the fruitfulness of mixing qualitative accounts and survey data to effectively infer how common threads that emerge from interviews connect with empirical evidence about the structure of refugee social networks (Ryan et al., 2007; Johnston et al., 2019). Personal interviews and focus group discussions can provide opportunities to learn about refugee networks without the response constraints of survey data collection and also

generate additional research questions about the structures of refugee social networks. Scholars interested in adopting these approaches to learn about the social networks of refugees should consider the techniques employed by Ryan and coauthors in their study of Polish migrants in London (2007). A snowball sampling approach of refugees in a particular city or even neighborhood could identify potential participants to engage in focus group discussion or targeted interviews for this work.

In addition to generating qualitative research from structured focus groups and open-ended interviews, survey data offers detailed information about the structures of refugee social networks. Lamba and Krahn provide an example of this through their survey of a representative sample of refugees in Canada (2003). They ascertain information about the types of relationships that refugees form during the initial period after resettlement and also identify the ties that emerge as refugees become more embedded in their host communities. Migration scholars interested in refugee integration outcomes may also consider surveying host community members more generally about the demographic characteristics, socio-economic attributes, and ethno-cultural backgrounds of community members. Asking respondents to indicate who they talk to or seek out for advice, jobs, childcare, or additional forms of social capital conveyed by network ties can be an informative way to test whether theoretical models reflect the key characteristics of refugee social networks that emerge in host community structures. Capturing more information through surveys could further illustrate the forms of vertical and horizontal bridging taking place between refugees and host community members to convey access to social capital and resources (Coleman, 1988). Observational survey data provides a rich source of knowledge about the structures of refugee social networks, yet may not be suitable for all research questions. To address policy-

focused research and types of interventions which may influence the structures of refugee social networks, integration outcomes of refugees in their resettlement contexts, or perceptions of refugees by host community members, survey experiments may be a more appropriate methodology. Larson and Lewis examine information transmission across social networks in two villages in Uganda by seeding information about an event which would be hard for individuals to verify without communicating with peers in their social networks (2016). An experimental approach seeding information among a few refugees – such as details about free language courses within the host community that would be otherwise difficult to learn about – could provide one possible opportunity to examine information spread within these networks. Ongoing experimental research by Larson and Lewis seeds information about refugees to members of refugee-receiving communities in Uganda to observe the effects of this information intervention on attitudes toward refugees throughout the extended social networks of these communities over time (2021). This research links together experimental treatments with survey data, generating not only a clearer picture of the structure of refugee social networks, but also high-quality evidence to inform policymakers and stakeholders engaged in refugee resettlement.

4.2 Benefits to Refugees of SNA Research

A human rights-based framework for immigration policy centrally aims to prioritize the rights and protections afforded to refugees (Gorlick, 2000). Encouraging additional efforts to study refugee integration through social network analysis opens up a valuable opportunity to inform the creation of human rights-based immigration policy. Policymaking is a complex and time-consuming process in which the collection of rigorous empirical evidence is only one small part. However, creating persuasive arguments supported by high-quality data and collaborating with

stakeholders directly engaged with the legislative issue area of interest opens opportunities to work with policymakers to effectively incorporate research findings into the legislative process (Goodvin and Lee, 2017). Evidence from the emergence of “sanctuary cities” in the United States suggests one avenue by which effective partnerships between researchers, immigrants, immigrant-serving organizations, and local governments directly impacted data-driven immigration policy in the short-term (Huang and Liu, 2016). Federal immigration policy inertia is more difficult to overcome, but even this limited success at the city level suggests that researchers should think critically about how their work can influence policy choices. Scholars can use their knowledge and expertise to generate high quality data for policymakers and participate in the policy creation process so that these data slowly filter into well-informed immigration policy grounded in a human rights-based framework.

This thesis synthesizes the scholarly literature on social network analysis and migration and provides a novel contribution to our understanding of refugee social networks drawn from agent-based modeling. This evidence centrally supports the argument that the methods and theoretical approach of social network analysis can effectively generate a broader understanding of the ties that refugees form in social networks and the types of conditions which lead to better integration outcomes for refugees; however, these SNA methods must take into account the differences between refugee resettlement and other forms of migration. As I extend and continue this broader research agenda, I hope to engage with the academic body of refugee research at the same time as I engage with refugees and community members themselves, as well as with policy makers and bureaucrats engaged in the refugee resettlement process. These stakeholders have vested interests

in improving refugee resettlement and integration outcomes, making them crucial partners to engage with outside of the community of scholars working on this subject.

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