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Authors: Sarah Ann Mason-Renton, Isaac Luginaah, & Jamie Baxter

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The Community Divide is more Detrimental than the Plant Itself: Confrontational Stigma and Community Responses to Rural Facility Siting

Sarah Ann Mason-Renton
University of Western Ontario
London, Ontario, Canada
smason27@uwo.ca

Isaac Luginaah
University of Western Ontario
London, Ontario, Canada
iluginaa@uwo.ca

Jamie Baxter
University of Western Ontario
London, Ontario, Canada
jbaxter6@uwo.ca

Abstract

Rural communities are changing as ex-urban residents in-migrate with differing expectations than long-time residents of the surrounding agricultural community. The implications come into focus when techno-industrial developments are introduced in rural landscapes—potentially affecting residents' place attachment. In the Township of Southgate, Ontario, a proposed biosolid (sewage sludge) processing facility resulted in hostile community conflict and emotional impacts that have driven a wedge between friends and family members. Utilizing in-depth interviews (n=22), this paper examines narratives of community in Southgate Township and the emotional impacts residents experienced during the facility siting process. The results suggest that divergent responses to facility development and landscape change has stimulated particularly strong intra-community conflict and emotions, altering the ways rural residents initially perceive their landscape and community as a safe tranquil place with a strong sense of community. Emerging from this analysis is the notion of confrontational stigma whereby residents worried the polarizing conflict that emerged in the community between those who oppose the facility versus those who support it for economic and agricultural purposes is leading to outsiders viewing their community negatively. Residents described how this depth of conflict could be more detrimental to the community than the effects of the facility itself. These findings suggest greater attention to community-level impacts of facility siting in rural areas in particular. This study makes recommendations for a facility siting process in rural communities that is more attentive to the diversity of rural residents, their range of place attachments and the potential for lasting social and emotional impacts within these diverse rural communities.

Keywords: biosolids; community conflict; place attachment; community dynamics; waste processing; risk perception

1.0 Introduction

Rural communities are evolving socioculturally and demographically as urban residents migrate for an often idealized notion of rural life and an escape from urban environments (Hay, 1992). These new rural landholders often possess different perspectives on the rural landscape than farmers (Cooke & Lane, 2015; Cadieux & Hurley, 2011), which may result in increasing pressure on rural lands (Abrams, Bliss & Gosnell, 2013). However, as Hiner (2014) points out, this difference may have less to do with length of residence per se and more with residents' political ideologies and place expectations. This influx of new residents may be welcomed and seen as bringing positive change to rural communities (Hoggart, 1997). However, this is not always the case as in some instances intra-community conflict over contentious developments may intensify following such amenity migration (Batel et al., 2015; Baxter, 2006). Small towns are known for their defined social patterns and close knit structures (Jacquet & Stedman, 2013). It is in this context that the notion of old-timer and newcomer is meaningful as cliques are easily formed along these lines, with a tendency to alter internal relationships as "the power of shared histories declines" (Jacquet & Stedman, 2013, p. 1290). While this view has been critiqued as too simplistic (Wilkinson Thompson, Reynolds, & Ostresh, 1982) as well as for failing to account for the importance of residents' values and ways of life (Baxter, 2006; Smith & Krannich, 2000), keeping this dynamic in mind is useful when examining the well-being impacts of proposed new development.

Whether full-time or part-time residents, visitors or newcomers, individuals have differing expectations regarding what is right for the rural landscape (Soini, Vaarala, & Pouta, 2012). Hence, emerging change, such as techno-industrial development, can result in disagreement and conflict (Devine-Wright, 2009; Baxter, 2006; Vorkinn, & Riess, 2001; Walker, 1995). For example, while both farmers and non-farmers may support limited local population growth (Smith & Krannich, 2000), farmers traditionally value the agricultural way of life while non-farming rural country residents seem more likely to establish their place attachments and community expectations based on natural amenities (Hiner, 2014; Masuda & Garvin, 2008). With the importance placed on what residents' value and what they are attached to in their community, it is important to understand the nuanced expectations across community groups, rather than base assumptions on simplistic dichotomies.

With technological advancements, there are more manufacturing and extractive industries which are being increasingly sited in rural spaces due to the availability of cheaper land. The intrusion of these technologies triggers fears of potential technologically related risks and hazards (Baxter, 2006; Baxter, Eyles, & Elliot, 1999; Pigeon & Kaspersonet, 2003; Kunreuther, Fitzgerald, & Aarts, 1993; Krimsky & Golding, 1992; Beck, 1992). For example, Devine-Wright and Howes (2010) found place attachments and individual's view of place played the strongest role in predicting opposition to an offshore wind energy development. For the purposes of this paper, we define place attachment as the emotional bond that individuals and/or groups establish with specific settings they inhabit or frequently visit (Altman & Low, 1992). This conception of place is particularly important when the landscape and nature are considered by many to be a place for emotional- and self-regulation as well as psychological restoration (Devine-Wright & Howes, 2010).

As residents experience relatively dramatic changes to rural landscapes, greater attention may be paid to stigmas (e.g., dirty, noisy, unhealthy) associated with the technologies involved (e.g., wind turbines, waste facilities) which can have a spiraling impact on spoiled identity as environmental assessment processes take hold and facilities get built (Parkhill, Butler, & Pidgeon, 2014; Peters, Burraston, & Mertz, 2004; Gregory, Flynn, & Slovic, 1995). The emerging light cast on facility siting in rural places has historically, and pejoratively, been equated with the Not-In-My-Back-Yard (NIMBY) syndrome. Yet, NIMBY has been exposed in the literature as largely a political concept generally meant to undermine those opposed to new developments (Wolsink, 2000). In general planning, risk perception, and facility siting researchers have criticized NIMBY as overly simplistic, something that too easily glosses over the multifaceted nature of risk perception and the complexities of opposition (Wolsink, 2006; Devine-Wright, 2009; Mcclymont & O'hare, 2008).

Although some existing research has examined facility siting from the perspective of individuals' place attachments, risk perceptions, and technological stigma in the context of communities facing new facilities (for example Atari, Luginaah, & Baxter, 2011), such perspectives remain under explored. Devine-Wright and Howes (2010) show how conflict may be linked to variation in place attachment (see also Kroll-Smith & Couch 2015), while intra-community conflict may likewise be linked to place based concerns about the distribution of facilities within the community, health, and the distribution of benefits from the facility (e.g., Walker, Baxter, & Ouellette, 2014; Baxter 2006). Yet, there is relatively little empirical research devoted to how these relate to community conflict and the impacts this can have on the community itself—which may have an equally serious short and long-term impact. This research aims to address this gap in the literature. Specifically, the study explores residents' responses to and perceived impacts from a proposed regional biosolid (sewage sludge) to fertilizer processing facility in the rural community of the Township of Southgate, and if any stigma (facility or community) was perceived. This research unpacks how rural residents' place attachments and emotions surrounding contentious community issues may contribute to a diversity of perceptions and may be drivers of intra-community conflict.

1.1 Place Attachments in Changing Rural Communities

This research aims to draw connections between place attachment, risk perceptions and technological stigma within rural landscapes. An expanded and enriched focus on place attachments and community context in risk research provides a more comprehensive approach to examining perceptions, responses and broader societal trends surrounding the support for or opposition to techno-industrial developments (Boyd & Paveglio, 2015).

In changing rural communities, Parr (2010) characterizes residents' experiences in place as eliciting emotions that draw upon the wide range of senses. For instance, the concept of place attachments focuses on the emotional bonds between people and their well-known environments, which can often promote community interaction and emotional ties (Manzo & Perkins, 2006; Devine-Wright & Howes, 2010; Altman & Low, 1992). Emotional bonds develop between individuals or groups and the familiar locations they reside in or often visit, such as one's home or neighborhood, and frequently involve both social and physical sub-dimensions (Altman & Low, 1992; Tuan, 1974). Dramatic land use changes have the potential

to disrupt not only the biophysical nature of the landscape, but also the social interaction of an area as well (Jacquet & Stedman, 2013; Anderson, 2013).

This important concept of place attachment nests within the overarching construct sense of place. Within environmental psychology literature (Jorgensen & Stedman, 2001; and Stedman, 2002), sense of place describes specific place relationship and includes place dependence, place identity and place attachment. Alternatively, sense of place is often more generally described as a multidisciplinary and complex construct involving core elements such as rootedness, belonging, place identity, meaningfulness, place satisfaction and emotional attachment in humanistic geography (Demiglio & Williams, 2008). While in some instances (for example Altman & Low, 1992) place attachment and sense of place are used interchangeably (Patterson & Williams, 2005), we acknowledge the differences in these terms and adopt the notion of sense of place as an overarching construct as described above. These affective bonds between person and place have been examined in the realms of environmental psychology (Jorgensen & Stedman, 2001; Stedman, 2002; Hummon, 1986) and humanistic geography (Eyles, 1985; Relph, 1976; Tuan, 1980; Butz & Eyles, 1997) among other social science disciplines including anthropology and sociology. As health geographers, Williams et al. (2010) describe how some inquiries into sense of place are less place-based, but rather focus on the psychological components; whereas the geographical understanding of sense of place, and other place-based constructs such as place attachment, pay attention to geographical understanding and context. We similarly adopt a geographical definition of place attachment (defined above as the emotional bond that individuals and/or groups establish with specific settings they inhabit or frequently visit) placing primacy on the place-based setting in which these bonds form, and simultaneously referring to geographical place, social community/environment, and emotive bonds (Williams et al., 2010).

While, place attachments are not completely unique to each individual, differences in daily experiences and practices, biography, and place specific social relationships impact each individual's attachment to place in unique ways (Simmons & Walker, 2004; Demiglio & Williams, 2008). This sheds light on the consequences of idealized notions of rural life, when they confront development and the changing realities in the rural landscapes. Furthermore, strength of place attachment has been found to influence opposition (Vorkinn & Riese, 2001), however more recent research has highlighted the importance of whether a proposed development fits with residents' attachments or not for predicting facility opposition. For example, Devine-Wright and Howes (2010) found that public opposition to large-scale renewable energy projects was associated with strong place attachments to the community as a restorative environment. However, strong place attachments are not always linked to opposition, especially when developments are seen as improving or complementing a locale that may be viewed as languishing economically (Devine-Wright, 2012; Mason-Renton & Luginaah, 2016). Devine-Wright and Devine-Wright (2009) emphasize the nuanced and complex nature of individual's place attachments and symbolic meanings associated with techno-industrial developments such as large-scale electricity transmission towers, which can in turn impact residents' differing affective or behavioral responses. Thus, changes to places are not necessarily always disruptive to place attachments and such changes can have either negative or positive impacts for people (Manzo, 2014). It is how these changes to place are interpreted that is important for residents' response and

community dynamics (Batel, Devine-Wright, Wold, Egeland, Jacobson, & Aas, 2015; McLachlan, 2009; Devine-Wright & Devine-Wright, 2009).

Rural residents' strong felt, and often differing, place attachments can heighten intra-community conflict as they influence the ways in which residents perceive and respond to risk. While this diversity of responses to place change has been shown (Devine-Wright & Howes 2010; Vorkinn & Riese, 2001) what remains to be discovered is how divergent responses due to residents' varied attachments to place within heterogeneous rural communities is experienced and how this may be altering community dynamics. We extend this concept further by examining the interactions between these potentially divergent groups and any social or emotional impacts this may have.

1.2 Felt Impacts of Facility Siting Processes—Community Conflict and Stigma

Just as place attachments are variously constructed and context-dependent, so too are technological risk and stigma. Here we connect two forms of stigma—technological stigma and place (community) stigma—with facility siting and conflict to develop the idea of confrontational stigma that emerged from our results. Internal conflict can lead to a 'corrosive community' characterized by stressful chronic interactions between individuals and groups within a community as well as with outsiders (Freudenberg, 1997; Picou, Marshall, & Gill, 2004). Facility siting processes may instigate or reinforce group differences thus propagating intergroup conflict regarding current or potential environmental contamination (Batel et al., 2015; Anderson, 2013). These intergroup divisions and conflict may arise based on differing ways of life or length of residence. This conflict may be experienced as an individual impact, regardless of position towards proposed developments, as well as a barrier to facility siting and development (Baxter, Morzaria, & Hirsch, 2013; Baxter, 2006).

Although there has been a lot of work on conflict between opposing communities and industrial developers, research that focuses on intracommunity conflict related to industrial development is relatively lacking. This is seen in foundational environmental contamination and conflict literature such as that surrounding the Love Canal injustices (Fletcher, 2002). Walker et al. (2015) examined intra-community conflict and psychosocial impacts of wind developments in rural Ontario, however focused less on residents' attachments to place or the interaction between these conflicting groups. Further, while much of the environmental hazard research regarding community conflict has focused on the nature of the hazard itself, Baxter (2006) and Devine-Wright and Howes (2010) call for greater attention to community context. The effects of conflict in these seemingly close-knit rural communities is rarely unpacked in relation to facility siting—despite the weight rural residents place on community social interactions and thus the propensity for felt impact from community disruption.

A focus on residents' place attachments will deepen our understanding of how techno-industrial developments and risks impact individuals' feelings regarding their community and associated place values (Simmons & Walker, 2004). Place attachments are dependent on symbolic meanings as we attribute meaning to specific landscapes and subsequently become attached to such meanings (Stedman, 2002). The desire to maintain a positive community identity has a notable effect on the community's response to a hazard (Baxter & Lee, 2004) and emotions are reinforced

by any perceived or lingering stigma as a result of a noxious facility (Goffman, 2009; Hummon, 1986). Issues surrounding stigma engage place attachment and overarching sense of place and place value concerns to examine residents' responses to place change and perceived impacts (Gregory et al., 1995). In regards to the environment, the emergence of stigma is often accompanied by increasing societal concerns about ecological and human health risks of technologies (Gregory & Satterfield, 2002). These stigmatized places often share the common feature of eliciting high perceptions of risk, fuelling opposition and a violation of what people perceive to fit with or be right for their community (Goffman, 2009; Atari et al., 2011). Technological stigma often goes beyond conceptions of perceived risk to something that is shunned because it overturns a previously favoured condition, which is directly related to individuals' multidimensional place attachments (Gregory & Satterfield, 2002; Wester-Herber, 2004). Further, due to residents' varied expectations of the landscape, technological stigma may not be felt if techno-industrial developments are seen as a being part of the local landscape (Parkhill et al., 2014). Opposition towards landscape or community change can be an expression of the motive to preserve community places, spaces and interactions that these residents' value (Devine-Wright, 2009).

This paper uses the preceding theoretical constructs to examine how (if at all) this facility siting process has (a) impacted residents' place attachments and fueled intra-community conflict (b) how residents perceive their community to be stigmatized as a result of this process. This paper proceeds with a description of the facility siting context, the methods utilized in this research, a discussion of key themes which emerged, and a final discussion and conclusion. It is worth noting the temporal arrangement of conceptualization as this study did not set out to conceptually develop notions of stigma. The study initially set out to understand rural residents' experiences of change in their community during the facility siting process. However, the idea of confrontational stigma emerged in the interview analysis as a way to connect concepts of rural community place attachments, facility siting and stigma.

2.0 Biosolid Facility Siting in Southgate, Ontario

The Township of Southgate can be characterized by a recent high turnover of population and rapidly increasing income—likely due to the influx of relatively wealthy ex-urbanites. Southgate—population 7, 100 (Statistics Canada, 2013)—is a small middle class rural municipality, with a median household income of $56,480 compared with the provincial median household income of $66,358 (Statistics Canada, 2013), located in rural southwestern Ontario (for a full description of sociodemographic community characteristics see Mason, Dixon, Mambulu, Rishworth, Mkandawire, & Luginaah, 2015). The Village of Dundalk—population 1,900—(Statistics Canada, 2013) is the only sizable village within the municipality. While Southgate's net population has not changed recently (net growth of 18 residents from 2006 to 2011), the township has experienced substantial in- and out-migration (about 21.5% of current residents have moved in to the community during this time period with similar rates of outmigration) resulting in population demographic and socio-cultural changes. However, between 1996 and 2006, when the median household family income almost doubled ($30,803 to $56,480 respectively), Southgate experienced a net population growth of 11%. This suggests that newer residents have higher incomes than long-time residents do. These residents likely fall in to the growing commuter population, whereby more than half of the population now commutes elsewhere, mostly to distant urban centers, to work

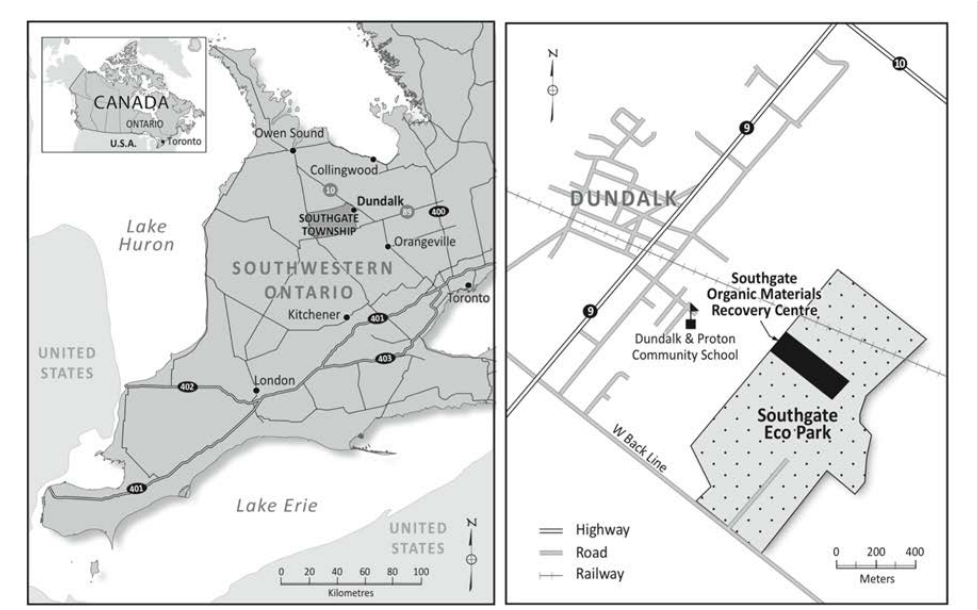
(Mason et al., 2015). This has implications for residents' attachment to place as a locale for refuge and restoration from their daily work rather than a place of work and consumption. However, being located about 100 km north of the Greater Toronto Area, Southgate is not representative of the typical urban-rural interface (where rural communities border urban regions) and the change accompanying this. Nevertheless, these newer residents with higher incomes and ties to surrounding urban regions have seemingly different expectations for community amenities—resembling those of urban communities. As we observe, this can have implications for reactions towards community development and cohesion.

In 2011, a regional biosolid (processed sewage sludge) to agricultural fertilizer processing facility, the Organic Material Recovery Centre (OMRC), was proposed to be located in the Township of Southgate in an industrial "Ecopark" adjacent to the village of Dundalk, Ontario, Canada (see Figure 1). The community went through a very contentious siting process lasting over a year resulting in the approvals being granted in the fall of 2012 and the facility becoming operational in the spring of 2013. Throughout the siting process community conflict escalated and the social and emotional impacts of this siting process became evident through increased challenges to local governance, hostile public debate through news media and visible fracture within the community. The local and regional newspapers, for example became a battleground, as the following excerpts suggest, residents called each other out publicly, hailing activist members as bullies: "As a ratepayer of Southgate Township who has been watching the events unfold in the last few weeks… I am very angry and dismayed… people [are] using very aggressive bullying tactics and holding our township hostage". (Cheeseman, 2012). In return, community activists stood to defend themselves: "I too am very angry and dismayed… our 'small' group is neither aggressive or bully-like… we are peaceful and we are there to protect the land… who wants to live in a town where the only industry is waste related? Not me. Who are the bullies here anyway?" (Mainprize, 2012).

This media battle, traced in greater detail in Mason et al. (2015), signaled community members taking each other to task publicly, which warranted further exploration. Conducting this research at the height of the uncertainty in the facility siting process provides an opportunity to understand the impacts of facility siting and the extent and determinants of the breakdown of community relationships.

While studies of this sort tend to focus on the impacts as defined by the facility and siting process (Luginaah, Taylor, Elliott, & Eyles, 2002; Wakefield & Elliot, 2000) social interaction also plays a key role (Devine-Wright & Howes, 2010). We contribute to this literature by exploring the differential interplay between residents in favor of the facility versus those who are opposed and how the social interplay between these polarized groups is important for better understanding the impact diverse values have on social and emotional outcomes—well-being—during and after the facility siting process.

Figure 1: The Township of Southgate Located in Rural Southwestern Ontario (left). The Location of the OMRC within Southgate's Ecopark is Shown (right) in Relation to the Village of Dundalk.



Source: Authors.

3.0 Method

To add depth of understanding about the interconnections between residents' place attachments and risk perceptions, we adopted an exploratory and inductive qualitative methodology involving in-depth interviews (n=22) with 23 adult Southgate residents (one interview was conducted with a husband and wife). As suggested by Baxter and Eyles (1999), this method allows for a better understanding of the multiple meanings of risk in the context of residents' everyday lives, rather than a focus on the hazard characteristic alone. Semi-structured dialogue extends beyond expressed concern, helping to uncover deeper issues of contested ways of life and community expectations and values (Baxter & Eyles, 1999). The primary author conducted these interviews in the summer of 2012 while the facility was still in the siting process. This allowed us to investigate residents' perceptions in a state of uncertainty, rather than their perceptions of an established facility, as is frequently the case. Nine participants opposed the facility, seven were in favor and seven expressed both benefits and concerns—we label this group as 'undecided'. With the heightened community conflict and ongoing legal case against the municipality, some members of the opposition group abstained from participating (described in detail in Mason, Walker, Baxter, & Luginaah, 2016).

Purposive snowball sampling was utilized, which allowed for the examination of a wide range of perceptions. Using this methodology, sampling continued until saturation was reached (Strauss & Cobin, 1990). Key informants purposively contacted to begin this 'snowball' process included a local farmer who had publicly supported the facility and expressed interest in the product, a local municipal official, a leader involved in the opposition movement against the facility, as well as a local business person who had expressed both concerns and support for the facility. This was done to ensure a diversity of participants. Respondents were then asked to

refer an individual who has an opinion on the topic, but may not necessarily feel the same as they do. Informed written consent was obtained prior to beginning any interviews and a semi-structured interview guide was used to examine residents' community attachments, expectations, and opinions of the proposed facility and subsequent agricultural land application in their community including environment and health risk perceptions. Residents were typically interviewed at their homes or in private meeting places of their choosing and interviews lasted 42 minutes on average. The interviews and field notes were transcribed verbatim, examined for accuracy, and analysed using NVivo for Mac 11.3.2 qualitative analysis software for further thematic analysis. The primary author transcribed interviews as they were completed such that early interviews informed later ones and emerging themes were examined further. To enhance analytic rigor researcher triangulation, long-term field exposure throughout the siting process, expert checking and ongoing researcher reflexivity were utilized. Direct quotations from the interview transcripts demonstrate key themes, serve to contextualize responses, and act to maintain respondents' voices in the interpretations. To protect anonymity of the respondents, pseudonyms are utilized.

4.0 Findings

4.1 Differences in Individual Values and Place Attachments

The general discussions of community values and what people like about the place they call home sheds light on residents' place attachments. Many residents described Southgate as a typical small rural town, beautiful, natural, friendly, close knit, family oriented, agriculturally based, economically struggling, bedroom community. Yet, amid these shared values are evidence of fractures whereby long-time farmer James (lifelong agricultural, 50s, supportive) highlights that the rural community as "A town [with] a commuter based population… then the rural community is basically agriculture based", setting the town as a somewhat separate 'bedroom community'. Emily further highlights the commuter properties of the community, while emphasizing its positive qualities for raising a family.

I would describe it as a rural community, um kind of a community where a lot of people live but work elsewhere, bedroom community, um fairly not poor but kind of a lower income community… but I think it's a nice place to raise your kids a rural setting. (Emily, 30s, non-farm rural, lifelong resident, undecided).

The description of the community as both agriculturally based and an economically struggling bedroom community suggests a duality between residents making a living off the land and others who commute elsewhere to work. These residents have also described this as primarily a duality between town and country residents. Further, there seems to be a faction of residents that associates Southgate with a place to live, work and play and others who commute elsewhere to work and see Southgate as their 'escape':

From our experience, most of the people who are, let's say over 60, have been here for a long time and their families are here, and most of the people under 60 we have found are people who have moved from the city, usually Toronto, and are looking for an escape from the city and usually a more rural environment. The attitudes

between the two are not at all the same (Emma, 20s, non-farm rural, newer resident)[1].

The identification of what residents' value and identify with in their community helped us to better understand how and why (if at all) the proposed facility was disrupting their place attachments and resulting in emotional impacts. Many residents did not perceive the biosolids facility to be 'right' or 'natural' for their community or to 'fit' with their place attachments. With the confrontation that their environment is not as they knew it to be, residents are undergoing epistemological responses as they are forced to evolve their ways of knowing and potentially change their place attachments. We also must consider the ways farmers' attachment to place and their rural environments are changing. It is important to further examine how their daily agricultural practices and community interactions are altered as they learn to share their space with an evolving community of individuals who arguably value local agriculture, industry and economics less than has historically been the case.

4.2 Changing Sense of Community and Intra-Community Conflict

Many long-time residents discussed how they feel their community has changed, especially the increasing tension between the agricultural and non-agricultural members in the community. Ben describes how the dynamics of the community are changing particularly as fewer families and young adults are choosing to stay in the community and farm:

> It's different from when I grew up… All of my neighbors and most of my friends were growing up on a farm. There were town kids and there were country kids so that's changed a lot over the past decade, two decades or so… I don't think there are as many people who are staying in the community. (Ben, 50s, long-time agricultural, supportive).

While agriculture continues to thrive in this community, the number of agriculturally based families that are active in the broader community is decreasing. These changes in local agriculture and the tendency of many young adults to leave the community for opportunities in urban areas are altering social and political dynamics in Southgate. John stated:

> I am worried about how I see the community changing as far as the demographics of it… I mean that there is starting to be less [agricultural influence]… within our community we are getting outside influence that is removing itself from the agricultural part of it. (John, 30s, lifelong agricultural, supportive).

The influx of migrants is further altering dynamics in this rural community. These emerging divisions are amplifying community polarization and decreasing

[1] Residents who have lived in the community for less than 10 years.

perceptions that it is closely-knit: "You know it used to be that you knew everybody and you don't as much anymore" (Valerie, 50s, lifelong village resident, undecided).

Additionally, residents described how these changes are eroding trust within the community whereby [new people] are less apt to trust people than maybe some of the... original people. "There is a lack of trust that sometimes shows up with some of the newer people who have lived in our community for a fairly long time but they still don't have that grass roots trust in the people that are here." (Ben, 50s, long-time agricultural, supportive).

Luke underscores how the agricultural-industrial development and the social changes occurring in response have acted to amplify community divisions:

> The changes that are happening… I have problems and concerns with the divisions in the community. I dislike that. There are these things that have been happening that are splitting people depending on their views (Luke, 50s, lifelong agricultural, undecided).

Southgate Township's biosolid treatment facility and the land application of the fertilizer product that accompanies it represent particularly strong emotional stimuli, altering the way residents perceive their landscape, neighborhood and other residents, thus amplifying intra-community conflict. Themes of industrial intrusion and rapid large-scale change more broadly give insight into why some residents are experiencing such a changing sense of place, depending on their attachment to place. Many residents expressed their deep discontent in the realization that these changes had occurred over recent time in the community. In the following section, the broader emotional and social impacts of the siting process on the community are elaborated.

4.2.1 Depth of community conflict. The perceived threat to divergent community values and ways of life and contrasting place attachments are at the heart of the emotional impacts experienced by residents, in response to the OMRC proposal and development. Residents both with overall positive or negative perceptions of the facility itself were disheartened by the social impacts on the community and spoke with deep discontent. Though it is sometimes difficult to discern emotion from interview text, the very deep feelings are palpable in the ways residents recount events surrounding the facility.

For example, John—a facility proponent—expresses deep disappointment in the tactics that were being used by neighbors to vent their emotions and his disappointment in the community:

> I am not going to start sending hate mail to my neighbors. We can still have a difference of opinion on what is right and what is wrong, but I mean there is hate mail being sent so it is a little disappointing. (John, 30s, lifelong farmer, supportive).

Residents describe how the facility siting process strained and in many cases ended friendships dividing this previously closely-knit and friendly community. Ironically, it was this close-knit nature of the community that many people valued and thus residents like Ryan and Pam display sadness over this loss:

> There are some pretty upset people. It's definitely divided a lot of friendships… It's a big deal. I mean a lot of people that liked each other, don't like each other now and I mean functions in town seem strange because there's a group of people who are for it [the facility] and there's a group of people who are against it. (Ryan, 20s, lifetime non-farm rural resident, undecided).

> I can't believe things that are being said and done: neighbors arguing with each other and not talking over some of this stuff. It is literally tearing this town apart and it's horrible to see. (Pam, 40s, long-time village resident, opposed).

Residents frequently talked about how the facility and conflict in the community are not going to help anybody with "all the grief it's causing everybody" (Ryan). Claire expressed shock and sadness with how things have turned out:

> Ya, I mean as a member of the community… it's been difficult to watch some of the things happening and the way people have been acting. I think this has maybe shocked us a little bit and… you know some of the accusations and some of the measures that people have gone to make their point, I think sometimes exceeds what we would consider to be reasonable and that's too bad. (Claire, undecided, agricultural, long-time resident).

Residents outwardly spoke of these emotional impacts and divisions whereby Olivia (undecided, long-time village resident) described how "the divide that is occurring in the community could be more detrimental than the effects of the plant itself". While facility risk assessments are meant to consider potential environmental and health implications of a proposed facility they may not adequately consider the social and emotional implications and how these might be mediated. While less tangible and more difficult to quantify, at least eight Southgate residents expressed this as being the most detrimental and greatest felt impact throughout this facility siting process. Similar to Olivia, Luke (undecided, lifelong agricultural) went so far as to say: "As I've thought about it, I think it's the single thing that bothers me the most: it's pitted people against each other."

4.3 Community Stigmatization

Conflict was also manifest in strong expressions of concern about community stigmatization that accompanied the biosolid treatment facility. However, not unlike the polarized responses to the facility, residents' beliefs about what is stigmatizing differed and is bound up with the place attachment, values and importantly, the neighbor blaming that had begun to spiral out of control.

4.3.1 Technological stigma. The facility is the problem. Some residents (n=9) argued that the facility has disrupted the community's image and its ability to attract future residents, hence they blamed the municipality and proponents for imposing this negative and hazardous waste image on the township. These residents, who were generally newer to the community, expressed their concern, for example, for children being teased in high school by their classmates from surrounding towns for being from "Dumpdalk… [where kids are] making fun of it all" (Andrea, 30s, newer non-agricultural resident, opposed). Reluctance for families to move to the area because of the stigmatization surrounding the facility is also a concern: "to Toronto or Vaughan or the larger centers… Southgate could be known as garbagegate or shitgate" (Anna, 50s, undecided, newer non-agricultural resident).

Further, Ryan described this situation:

> You try to sell your house and all you see on the streets is "Truth not Trash" signs, it's kind of hard and people are going to start to wonder what that is and if you tell them oh it's this possible facility that is going to process waste you go oh I don't know if I want to raise my kids there. (Ryan, 20s, lifetime non-farm rural resident, undecided).

Individuals' place attachments are reinforced by perceived stigma as a result of a noxious facility.

4.3.2 The notion of confrontational stigma. The facility protest and actions of those opposing the facility precipitated what we refer to as 'confrontational stigma'—with some residents indicating their concern that their community is becoming negatively known to outsiders as a place where neighbors are vehemently against each other. Mike suggests that protest itself was too frequent: "I really feel that we've got this protest group that when they hear there's a protest [they say] 'let's join in'" (Mike, 50s, lifelong agricultural resident, supportive). Yet, in terms of community conflict, residents in favor of development viewed conflict as more disruptive and stigmatizing. These residents felt the protesting and opposition was resulting in the community being labeled by outsiders as a community rife with fighting and confrontation. This is evident in an outside news editorial in a neighboring community entitled *Controversy Continues*, which stated that some residents " [have taken] it upon themselves…[to start a] blockade, to write letters to the editor, attend and disrupt council meetings demanding to be heard, and initiating a court challenge to the [facility] proposal" (Mount Forest Confederate Editorial, 2012). In the comment below, David discussed how the community was largely being stigmatized because of the opposing group's actions rather than the facility itself:

> I believe that there are some citizens in this area that… will fight it until the end…. I would say from the group's actions. The plant itself, if it goes ahead and it runs according to plan I don't believe it will give Southgate the negative stigma people are saying. (David, 40s, lifelong non-agricultural resident, supportive).

Among residents who shared this belief is Maria who also expressed her concern that the main stigmatization is a result of community conflict:

> Unfortunately, I'm afraid they've already done that [stigmatization] because of the naysayers and how they've portrayed their side of the issue and protested the plant coming here. I'm afraid Southgate has been black listed because of that (Maria, 70s, long-time agricultural resident, supportive).

Other residents, such as Mike and Emily, further expressed their concern for how this form of stigmatization would negatively impact economic development and industries locating in the community:

> Ah ya because signs of the protest and everything else if I was an industry wanting to relocate into the area here why would I even try, everybody is fighting. As far as the Lystek plant, I don't think we are going to become stigmatized because of it. (Mike, 50s, lifelong agricultural resident, supportive).

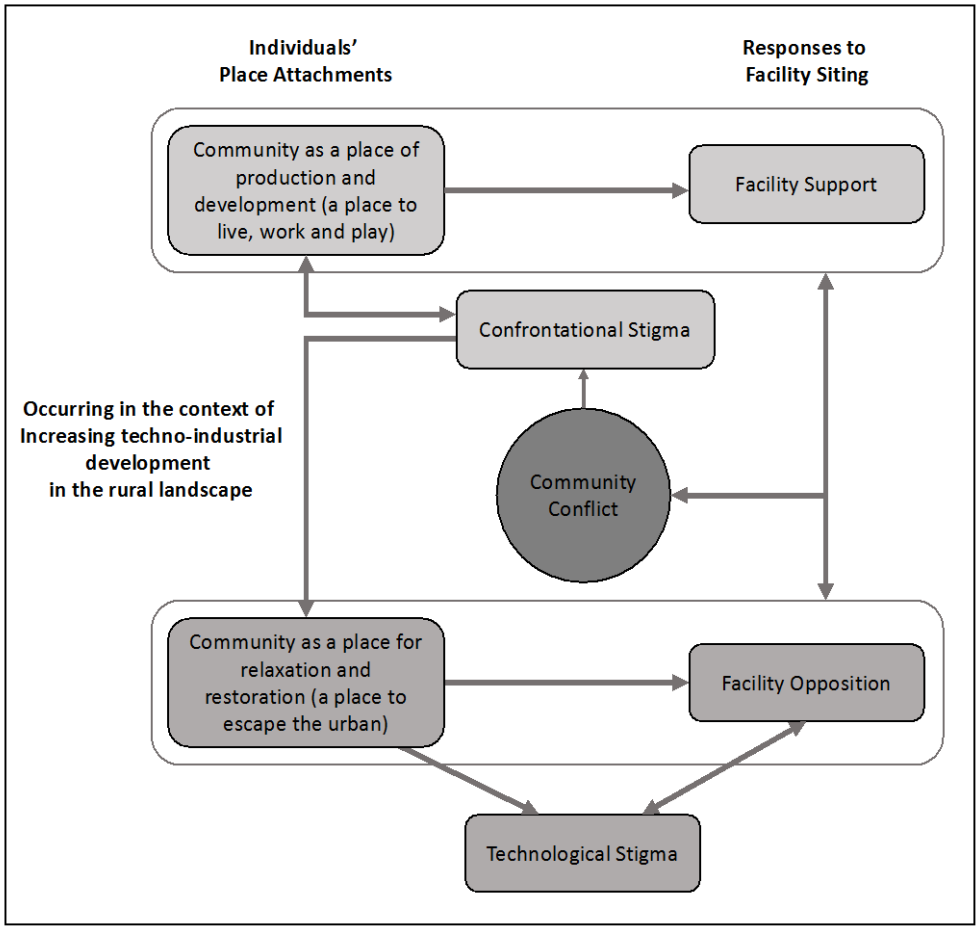
Out there to me it seems like really people only know about it because you know we've had protests and all that. If I was somebody looking to start a business here, or wanting to move my factory here, I'd think "oh god, what am I going to have to put up with to move it there". I think it's kind of a negative for any industry or anything coming here because I think I'd be worried if I was a small business owner, like why would I want to go to Dundalk now because look at all the fuss they've made just over this. (Emily, 30s, lifelong non-farm rural resident, undecided).

These responses to development in Southgate and the notion of 'confrontational stigmatization' showed residents' dynamic attachments to place and how each perceived community change, the construction of the facility or increased community conflict, was believed to disrupt these attachments and stigmatize the community.

5.0 Discussion

This case study highlights the concerns and community-level identity threats described by residents both opposing and in favor of the proposed facility, the most prominent being threats to quality of life and community cohesion. Emerging from the findings is the notion of confrontational stigma (see Figure 2) as a manifestation of the interaction between literatures on place attachments (Brehm, Eisenhauer, & Stedman, 2013; Devine-Wright & Howes, 2010; Stedman, 2006; Vorkinn & Riese, 2001; Altman & Lowe, 1992), facility/technological stigma (Peters et al., 2004; Gregory & Satterfield, 2002; Gregory et al., 1995; Slovic, Flynn & Gregory, 1994) and community conflict in rural communities who face facilities perceived by some to be noxious.

Figure 2: The Relationship between Residents' Differing Place Attachments, Responses to Facility Siting and Perceived Stigmas. The Interaction between Residents with both Differing Responses to Facility Development and Varied Place Attachments (Shown by Double Headed Arrows) Propagates Intra Community Conflict and Fuels Confrontational Stigma.



Source: Authors.

This study contributes to literature showing residents' varied expectations of and attachments to their community can contribute to a diversity of responses to proposed noxious developments (Devine-Wright, 2009; Devine-Wright & Howes, 2010; Baxter, 2006; Vorkinn & Riess, 2001; Walker, 1995; McLachlan, 2009; Manzo 2014). These findings substantiate research (for example Manzo, 2014 and Devine-Wright, 2012 among others), showing that experiences of place change are not always disruptive and perceived as negative, but is instead based on residents' place attachments. Furthermore, although previous research has shown that residents with stronger attachment to place showed comparatively stronger opposition to technological development (Vorkinn & Riese, 2001), we found that having strong attachment to place per se is insufficient (Baxter & Greenlaw, 2005). What matters are the interplay of place attachment and the technology of the facility at issue. The diverse place attachments and responses to techno-industrial development corroborates existing research (Devine-Wright & Howes, 2010; McLachlan, 2009; Batel et al., 2015; Manzo, 2014; Devine-Wright &Devine-Wright, 2009; Mason-

Renton & Luginaah, 2016) that strength of place attachment is only associated with opposition when a development is not perceived to 'fit' with residents' attachment to place.

Brehm et al. (2013) suggest that sense of place promotes pro-environmental attitudes and behaviors. While this may generally be the case, our study shows that residents' have varying definitions of what is 'best' for the community and environmental and thus their 'pro-environmental attitudes and behaviors' are not always aligned. Notably, the value differences and seemingly divergent expectations apparent in this case study appeared to influence the varied responses to the biosolids facility in this rural community (Jacquet & Stedman, 2013) and even act to accentuate intra-conflict and negative interaction between these divergent groups. These inherent differences in what precipitated conflict and confrontation such that outsiders are viewing the community as a place divided so harshly that friends publicly call each other out in local media and family members sit on opposing sides of the church pews depending on their views.

The conflict between residents in this rural community emerged as being influenced by the core difference between those who view 'rural' landscapes as a resource, equating it with food, agriculture and primary production; and those more inclined to emphasize the pastoral rural countryside as a place of relaxation and refuge. Techno-industrial (and potentially noxious) developments align with residents who hold a conception of their landscape as a place of production, however often conflicts with the expectations of residents idealizing a more consumptive or emotionally restorative rural landscape. While previous research has shown differing attachments to place and responses to place change, we contribute to the relative lack of research examining how these disparate groups interact throughout the development process and can contribute to lasting intra-community conflict.

In Southgate, the emerging perceptions of confrontational stigmatization showed residents' dynamic and yet conflicting desires and how these affect their attachments to place. Consistent with Gregory and Satterfield (2002) we find that the biosolids facility and the associated risk 'overturn a previously favored condition', an untouched natural wooded and grassland lot or a harmonious rural community, and thus are shunned. Similarly, Atari et al. (2011) found that technologies often share the common feature of eliciting high perceptions of risk and a violation of what residents perceive to be 'right' or 'natural' for their community. However, confrontational stigma extends these ideas of conflict and neighbor blaming. For those not opposed to the facility, confrontational stigma challenges their belief that the facility siting process, opposition and community conflict is potentially *more* detrimental and stigmatizing to the community than the facility itself. The social impact of residents' differing place attachments and responses to techno-industrial developments in rural communities can, in the eyes of some residents, create conflict so bad as to stigmatize the community, whether imagined as harmoniously pastoral or agricultural (Woods, 2005). This notion of community conflict as stigmatizing and a lasting felt impact in the community warrants future research after such facilities have become operational examining how 'lasting' such siting conflict may be.

We demonstrate how these contrasting perceived stigmas (technological or confrontational) may be drivers of the intra-community conflict and neighbor blaming occurring within the community. Stedman (2006) as well as Soini et al. (2012) found that long-term residents' place attachments are based on social relations while short-term residents tend to base their attachment to place on the

quality of the environment. This may help to explain why some residents (primarily shorter-term) saw the community as stigmatized by its environmental change while other (mainly long-time) residents were concerned with stigmatization due to community conflict and the changing community social relations observed in this case study. Similarly, Stedman (2002) found that place attachment fosters place protective behaviors. This can help to explain the action to protect ones' meaningful environment adopted by residents experiencing place-based disruptions, whether that is the physical environment short term residents attach to or the social structures which long-term residents were found to base their attachments on. With the drive to rural landscapes for both residential and industrial development, this notion of confrontational stigma may emerge at various geographical scales when a clash in place attachments, as observed in this case study, exists.

Last, we extend the facility siting and risk literatures (Baxter et al., 1999; Pigeon & Kaspersonl., 2003; Kunreuther et al., 1993; Krimsky & Golding, 1992) by showing how this changing sense of the community signifies a new form of risk from this facility—the social risk of conflict that can be both debilitating and perceived as stigmatizing. This has implications for facility siting and environmental assessment processes as many urban centers look towards rural landscapes for spaces of production and disposal. Further, as rural community expectations tip more towards consumptive uses and feelings of social change and distrust within the community continues in instances like these; this opposition and conflict is likely to increase.

6.0 Conclusion and Implications

This research shows how residents' differing attachments to place impacted the degree to which a (sewage) biosolids facility was seen to change such places, instigating opposition or support and driving community conflict that may be seen as stigmatizing as the facility itself. That is, we argue for attention to confrontational stigma in rural communities that may arise out of these contentious facility-siting processes or redevelopment of rural agricultural lands. This research emphasizes that residents' emotions and the social impacts of facility siting processes are present throughout the development of such facilities, but that broader emotional impacts can occur when community cohesion is disrupted. Although difficult to predict and measure, the impacts are long lasting. The findings call for a consideration beyond the traditional macro scale risk society literature and the localized social engineering approach of the facility siting credo (Kunreuther et al., 2013); towards a deeper accounting of the complex nature of rural community context. Differing responses to changes and development in rural communities, such as regional biosolid recycling in Southgate, are strongly felt and emotionally embodied and can fuel intra-community conflict resulting in potentially powerful impacts on social well-being.

From the point of view of facility siting and environmental assessment policy and implementation, proponents and developers alike need to better understand the dynamic and complex nature of rural communities that are now frequently targeted for noxious facility siting. Furthermore, this deeper understanding may help proponents to better execute siting processes that are inclusive and accommodating of the varied attachments to place and community expectations. Future research could examine a more dynamic and participatory siting process that attempts to accommodate residents' varying expectations of their locale and seeks to work with these residents to make such developments better 'fit' with these expectations. While we have no definitive answer yet as to how specific mechanisms will mitigate these

impacts, we hope this would help to decrease rather than propagate community conflict helping to mitigate the negative emotional impacts of noxious facility siting processes as was observed here. However, given the raw nature of community divisions, it is important to consider whether or not developers and planners alike will ever be able to please everyone in these contentious siting issues.

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