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Assemblage, place and globalisation

Michael Woods[1] | **Francesca Fois**[2] | **Jesse Heley**[1] | **Laura Jones**[1] | **Anthonia Onyeahialam**[1] | **Samantha Saville**[3] | **Marc Welsh**[1]

[1]Department of Geography and Earth Sciences, Aberystwyth University, Aberystwyth, UK

[2]School of Science, Engineering and Environment, University of Salford, Manchester, UK

[3]Department of Geography, University of Cambridge, Cambridge, UK

Correspondence
Michael Woods
Email: m.woods@aber.ac.uk

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Relational perspectives have become pre-eminent in geographical analysis of globalisation and its impacts in reshaping places, yet arguably leave unanswered questions about precisely how globalisation is reproduced through local places in practice. This paper seeks to extend and enhance the relational approach to globalisation and place by drawing on theoretical insights from assemblage thinking to articulate a methodological framework for empirical research. It draws on DeLanda's iteration of Deleuzoguattarian assemblage thinking to explore how the concepts of the exteriority of relations, territorialisation, coding, and multiplicity provide insights into the dynamics through which interactions between places and translocal assemblages affect changes in the properties and capacities of places and of their component parts, the internal adjustment of places to changes in components, and the possible future forms that a place may take following specific interactions. As such, the framework outlined advances relational analysis by permitting deeper analysis of the mechanics through which individual places endure and change in the context of globalisation and how these produce uneven geographies of globalisation. The discussion is illustrated by examples from empirical research on globalisation and rural localities.

KEYWORDS
assemblage, DeLanda, globalisation, place, relationality, territorialisation

1 | INTRODUCTION

The relational perspective in geographical research has recast globalisation as "an active reconfiguration and meeting-up through practices and relations in a multitude of trajectories" (Massey, 2005, p. 83), performed in and through places that are in turn changed as power-geometries are reconfigured. This conceptualisation has been applied to economic, social, cultural, and political dimensions of globalisation, producing spatially nuanced accounts that have critiqued earlier top-down, deterministic, and totalising readings (Sheppard, 2015). Yet as Anderson et al. note in a broader critique of relational theory, the ubiquity of the relational perspective is such that "in offering a 'relational' account of the social, it is easy to stop short of a set of subsequent questions" (2012, p. 172).

In globalisation research, approaches such as global production networks, relational comparative urbanism, planetary urbanism, transnational urbanism, relational poverty analysis, and more, have highlighted the dense and iterative interconnectivity of places; the influence of translocal relations in place-making; and the capacity for local agency to be asserted as

global networks and flows are produced through places. However, in taking the relationality of place as given, and in investigating lines of connectivity more than points of interaction, such studies have commonly stopped short of interrogating the detailed mechanisms and conditions through which local and translocal entities connect, how these conjunctions affect the constitution of places, and how they lead to certain outcomes prevailing over others. Indeed, although the relational approach points towards a place-centred analysis of globalisation, there are few detailed case studies of globalisation-in-place that examine the microprocesses and micropolitics underlying the relational constitution of place (for partial exceptions see Kelly, 2013; Massey, 2007; Rainer, 2016; Urquijo et al., 2018). This omission leaves gaps and paradoxes in relational accounts, including an unresolved tension between stability of form and dynamic change (Anderson et al., 2012).

This paper develops a framework for studying such questions by drawing on insights from assemblage thinking,[1] approaching globalisation as the aggregate effect of diverse interactions between assemblages, including between places-as-assemblages and translocal assemblages that transcend spatial locations. Assemblage thinking can extend and enhance relational analysis as a body of thought that adheres to a relational ontology – seeing society as "an assemblage of assemblages" (DeLanda, 2016, p. 37) – but diverges on elements such as the autonomy of related parts and their capacities (Anderson et al., 2012).

Moreover, assemblage thinking introduces an emphasis on transformation, involving enquiry into "the circumstances in which things happen: in what situations, where and when does a particular thing happen, how does it happen, and so on" (Deleuze, 1995, p. 25); or, applied geographically, how "spatial forms and processes are themselves assembled, are held in place, and work in different ways to open up or close down possibilities" (Anderson et al., 2012, p. 172). It redirects attention from the form and function of relations to the acts of transformation through which components are gathered, arranged, and dispersed, and relations established, reconfigured, and broken. For relational accounts of globalisation, assemblage thinking means shifting focus from tracing connections and interdependencies between places, to analysing how relations come into being, and how places are transformed through these relations.

Our approach is informed by Deleuze and Guattari's writing on assemblage (Deleuze, 1995; Deleuze & Guattari, 1988; Deleuze & Parnet, 1977) and its elaboration by DeLanda (2006, 2016), from which we derive key concepts: "relations of exteriority" (DeLanda, 2006, p. 10), emphasising the autonomy of component parts of an assemblage, which we apply to interactions between places and translocal assemblages and the addition, removal, and exchange of components; the parameters of territorialisation/deterritorialisation and coding/decoding, which are significant in the responses of places to changes introduced by interactions with translocal assemblages; and the conceptualisation of places as multiplicities (Briassoulis, 2017), encompassing innumerable actual and virtual versions of themselves – past, present, and future – which we enrol to emphasise the indeterminacy of globalisation and to explore the endurance of place identities in the face of globalisation and the circumstances in which radical transformation occurs.

Our argument has been developed through research examining globalisation and rural localities, involving an iterative process in which conceptualisation and empirical observation have informed each other. It draws on 37 case studies in 14 countries, involving over 580 semi-structured interviews, ethnographic observation, and analysis of historical and contemporary documents. Examples from this empirical research are presented as illustrations, but the framework applies equally to the analysis of urban localities and to analysis of "place" as defined in multiple forms, from neighbourhoods to regions.

The next section reviews relational work on globalisation, noting the limited engagement with places as assemblages, and introduces our approach by summarising the principles adopted from Deleuze and Guattari and DeLanda, and defining our vocabulary of place-assemblages and translocal assemblages. The following section develops the framework for assemblage-informed analysis of globalisation and place, with sub-sections focused on the key concepts of "relations of exteriority," "territorialisation" and "coding," and "multiplicity." The final section rearticulates the framework as questions for empirical research and illustrates its application through a short case study.

2 | ASSEMBLAGE THINKING AND GLOBALISATION

2.1 | Relational research on globalisation and assemblage applications

Kinkaid asserts that assemblage thinking "offers a critical response to the ascendency and naturalisation of (often deterministic) conceptions of 'globalisation' in geography at the same time that it echoes larger philosophical shifts in the discipline away from foundationalist premises of earlier paradigms" (2019, p. 3). In this, it builds on advances made by relational perspectives that critiqued earlier totalising and top-down accounts of globalisation. Massey's (1991, 2005) seminal contributions challenged assumptions about the emasculation of the local by unstoppable globalisation and asserted the relational constitution of place in uneven global power-geometries. Together with the parallel development of approaches such as

global production networks and transnational urbanism, Massey's work articulated a relational socio-spatial ontology that contrasts sharply with the treatment of globalisation in mainstream economics and political science (Sheppard, 2016). Indeed, as itemised by Sheppard, the relational framework has several resonances with assemblage thinking in its critique of developmentalist discourses and imaginaries, its acknowledgement of more-than-human dynamics that exceed and impact on globalising capital, and its assertion that "alternatives are ever-present and necessary" (2015, p. 1129).

However, the promise of the relational conceptualisation has not been fully realised in its empirical application. In spite of nods towards a flat ontology, many relational studies of globalisation and place remain tied to a scalar imaginary that presents the "global" and the "local" as separate realms, with the global acting on the local (e.g., Massey, 2007; Sigler, 2013). Relations have tended to be characterised as "networks," with places as "articulated moments in networks of social relations" (Massey, 1991, p. 28), implicitly suggesting that places are understood differently ontologically to the relations that connect them, while also overlooking the multitude of relations that are not articulated as networks (but that are implied in Massey's (2005) notion of the "throwntogetherness" of place). Moreover, empirical studies have commonly focused on political-economic structures, policies, and place-frames to understand uneven power-geometries and neglected more-than-human agency (Robertson, 2018). Recent research on infrastructure and globalisation (e.g., Wiig & Silver, 2019) and recognition of more-than-human elements in flows and exchanges of global capital (Bergmann, 2017; Bergmann & Holmberg, 2016; Sheppard, 2016) have only partially started to address this omission.

Thus, although relational studies of globalisation have elaborated the mutual constitution of the local and global and documented the unequal positioning of localities within global power-geometries, there is too often a missing evidential link demonstrating precisely *how* interaction with global flows produces transformation in places, *how* place specificities affect translocal networks, or *how* certain potential outcomes come to prevail over others. The criticism has been directed at global production network analysis (McGrath, 2018; Murphy & Schindler, 2011) and echoes the critique of global cities research made by Short et al., who argued for a shift in attention "away from which cities dominate to how cities are affected by globalization" (2000, p. 318).

The contribution of assemblage thinking in moving beyond these limitations is part ontological – presenting alternative perspectives on the interiority or exteriority of relations – and part methodological, providing tools for analysis of the place-situated processes that are constitutive of globalisation. Latour (2005) articulated the implications by proposing that the global only exists in the sites in which it is assembled from components through processes of translation, and that the study of the global must start by localising the global back to these sites. Only once this has been done can the global be re-assembled by laying "continuous connections leading from one local interaction to the other places, times and agencies through which a local site is made to do something" (Latour, 2005, p. 173). The global thus emerges as a property from the interactions between components of an assemblage, as also indicated in DeLanda's (2006, 2011) description of the "world-economy" emerging from relations between maritime cities. In another, Foucauldian-informed, formulation, Ong and Collier evoke an "*actual* global, or the global in the space of assemblage" that is produced through interactions between "global assemblages" and "other elements, occupying a common field in contingent, uneasy, unstable relationships" (2005, p. 12).[2]

Globalisation, then, is an expression of interactions within and between assemblages that result in the stretching, intensification, and acceleration of relations over larger geographical distances, thus producing a tendency towards the global. The association of such interactions with globalisation is a factor of their outcomes, not of their causes, and individually they may also be associated with other trends, including modernisation, industrialisation, urbanisation, and neoliberalisation. The aggregate effect is a deepening of global connections. In emphasising not just process but interactions, the assemblage approach thus redirects attention to the situated moments of engagement and transformation in which globalisation is reproduced.

Studies of globalisation employing assemblage ideas have highlighted the actions through which heterogeneous human and non-human actants, organisations, technologies, and resources are assembled to facilitate the operation of transnational industries, global value chains, and translocal social movements, among other aspects (for example, Henry & Roche, 2013; Herman, 2019; Hollander, 2010; Li, 2014; McFarlane, 2009).

Such studies have explored both material and discursive dimensions of emergent assemblages, noting for instance the material politics of components in infrastructure that enables connectivity (Bennett, 2005) or the boundary-enforcing interactions of material components in transnational agrifood assemblages (Law & Mol, 2008), as well as the discursive practices that facilitate trade and investment and global regulation of industries and markets (Higgins & Larner, 2017; Hollander, 2010; Li, 2014; Ong, 2007). At the same time, the research highlights contingency and indeterminacy. Both individual actants and assemblages have limited capacities, and assemblages may encounter dissonance, the capture of

components, and material failure that may break connections (Bennett, 2005) or spawn new unanticipated lines of global connectivity (Law & Mol, 2008).

The application of assemblage thinking has therefore advanced understanding of how globalisation works in practice, building on but extending the broader relational approach. However, this emerging literature has paid little attention to the transformation of place in globalisation. Studies have focused on relations between places, characterising these relations either as assemblages or as practices constitutive of assemblages. Places, in contrast, have been implicitly presented as passive and unproblematic, as sites of interaction and affect, but not as dynamic assemblages in themselves. Law and Mol (2008), for instance, name Burnside Farm as a site of articulation of the foot-and-mouth pathogen, but do not reflect on it as a place, while Latham and McCormack (2010) interrogate globalisation through the assemblage of urban marathons, but again do not consider how the transnational assemblage of marathons affects cities such as London, Berlin, or New York as assemblages themselves.

2.2 | Approaching globalisation through DeLanda

In seeking to combine an assemblage perspective with a place-centred analysis of globalisation, we have turned to DeLanda's (2006, 2011, 2016) iteration of Deleuzoguattarian assemblage thinking. This represents just one thread in the patchwork of assemblage thinking (Anderson et al., 2012; Brenner et al., 2011; Marcus & Saka, 2006). Indeed, many geographers have been wary of DeLanda's work, noting critiques of his interpretation of Deleuze (Buchanan, 2015) and of the "peculiarly scalar" character of his depiction of assemblages (McFarlane, 2009).

Our engagement with DeLanda is critical and qualified. Just as DeLanda articulates a critical refinement of Deleuze and Guattari, with marked disagreements (DeLanda, 2017; see also Buchanan, 2015), so we borrow selectively from DeLanda, while also drawing directly on Deleuze and Guattari and other strands of assemblage thinking where compatible. Although DeLanda presents his work as a streamlined "assemblage theory," we do not treat it as a comprehensive theory to be applied in its entirety, but rather as a set of ideas and arguments from which we can extract principles.

We are attracted to DeLanda by his clear exposition of the features of an assemblage that fundamentally emphasises relationality. For DeLanda, each assemblage is an individual entity, with a "fully contingent historical identity" (DeLanda, 2016, p. 19), but assemblages are also "always composed of heterogenous components" (2016, p. 20), which may be human or non-human and which perform material and/or expressive roles – the latter referring to performative elements and functions that indicate meaning or identity. Indeed, DeLanda observes, the material and expressive roles of components are "variable and may occur in mixtures, that is, a given component may play a mixture of material and expressive roles by exercising different sets of capacities" (2006, p. 12). Equally, "assemblages can become component parts of larger assemblages" (DeLanda, 2016, p. 20) in nested sets that are not hierarchical, but in which components in different assemblages "can directly interact with one another, individual to individual" (2016, p. 19). The molecular can engage and affect the molar, but at the same time an assemblage acts "as a source of limitations and opportunities for its components" (2016, p. 21), as when a community constrains its members by enforcing communal norms.

Alongside these attributes, DeLanda emphasises three further features pertinent to analysis of globalisation and place. First, assemblages are characterised by the exteriority of relations, which refers to the autonomy of components and implies that "the properties of the component parts can never explain the relations which constitute the whole" (DeLanda, 2006, p. 11). By this logic, the identity of a component is not determined by its relations in an assemblage and the identity of an assemblage is not dependent on a fixed set of components. Equally, an assemblage is not a "seamless whole," as it involves "additions which never reach a total and subtractions whose remainder is never fixed" (Deleuze & Parnet, 1977, p. 41).

As Anderson et al. (2012) note, it is the logic of the exteriority of relations that most differentiates Deleuzoguattarian assemblage thinking from other variants of relational thought, including actor network theory (ANT). The correspondences and contrasts between Deleuzoguattarian assemblage thinking and ANT have been extensively discussed by other authors (Anderson et al., 2012; Briassoulis, 2017; Müller, 2015; Müller & Schurr, 2016) and the two approaches are sufficiently close for later Latourian developments of ANT to be categorised within assemblage thinking. Yet, they diverge fundamentally on the assimilation of parts, ANT emphasising the integrity and wholeness of the actor-network but Deleuzoguattarian assemblage thinking asserting that the parts of an assemblage are never fully assimilated and thus cannot be explained by the properties of the whole (Anderson et al., 2012).

Equally, the identity of a component is not fixed by its function in an assemblage. Rather, "a component part of an assemblage may be detached from it and plugged into a different assemblage in which its interactions are different" (DeLanda, 2006, p. 10). By implication, an entity may be concurrently a component in multiple different assemblages, with different roles and relationships in each.

Thus, as globalisation proceeds through interactions between assemblages, component entities are added, detached, and exchanged. Commodities are bought and sold in transactions between producers and consumers; migrants move between communities; cultural trends appear and fade; corporations open and close branch operations. As entities move between assemblages, or are attached to multiple assemblages, they acquire new relations and are imbued with new capacities, but retain their essence. Similarly, the addition and subtraction of components changes the form of an assemblage, but its core identity is unchanged.

Second, DeLanda describes assemblages along two parameters: territorialisation and coding. The first concerns the structural coherence of the assemblage, with territorialisation referring to the boundaries, organisational structures, and relationships that hold an assemblage together and give it shape (DeLanda, 2011). A highly territorialised assemblage has firm boundaries, intensive internal ties, and strong homogeneity. A weakly territorialised, or deterritorialised, assemblage has fuzzy or porous borders and greater internal heterogeneity. The position of an assemblage on this parameter is not fixed, but evolves in cycles of territorialisation, deterritorialisation, and reterritorialisation.

Globalisation involves all three phases. The tendency of assemblages towards territorialisation to consolidate stability is articulated in trajectories of convergence and homogenisation: corporations adopting integrated systems and standardised products; supra-national organisations promoting universal values; synchronisation of fashions and tastes, from food to music; neoliberalism removing trade barriers and enlarging markets. At the same time, centripetal tendencies are disrupted by deterritorialising lines of flight – pathways that depart or escape from the assemblage (Deleuze & Guattari, 1988) – that breach the boundaries of an assemblage and spark new globalising relations. DeLanda (2006) cites migration, trade, postal services, telephones, and computers as examples of deterritorialisation that blur boundaries and give rise to new transnational assemblages.

The second parameter of coding refers to "the role played by special expressive components in an assemblage in fixing the identity of a whole" (DeLanda, 2016, p. 22). Coding is concerned with information and involves acts of naming, classification, mapping, valuation, and statistical quantification (DeLanda, 2011). An assemblage codes its components, fixing their identities in relation to the whole, but also in aggregate defining the identity of the entirety. A high level of coding is associated with centralisation and control; decoding, by contrast, indicates a weakening in the capacity of codes to regulate the components of an assemblage, for example when community social norms no longer dictate the behaviour of members.

Coding reinforces territorialisation, for example as standardisation in globally distributed production networks is achieved through regulations, technical guidance, and templates, or as international norms of human rights, environmental protection, or labour conditions are enshrined in legislation (Ong & Collier, 2005). As larger assemblages subsume smaller assemblages as components – for instance, in a corporate takeover – they over-code the new component to achieve integration, just as modern states over-coded tribal societies (Deleuze & Guattari, 1988). From the reverse perspective, cultures and societies experience decoding as traditional customs and conventions lose salience, and as the authority of national laws is circumvented by transnational lines of flight, such as in corporate tax avoidance or flows of illegal immigration.

Third, DeLanda highlights the principle of multiplicity to address the paradox of how assemblages can both be stable and always in a state of becoming. If the components of an assemblage are not tied by necessity, it follows that their convergence and engagement is non-essential and thus contingent, temporary, and unstable. Yet, assemblages are also "characterised by enduring states defined by properties that are always actual, existing in the here and now" (DeLanda, 2016, p. 108). The resolution of this paradox highlights a critical difference between assemblage thinking and actor-network theory, that assemblages can be isolated and bounded (see also Müller & Schurr, 2016).

Indeed, Deleuze and Guattari (1988) write that assemblages are defined by discontinuities in a seamless plane of consistency, "within zones that extend in space up to a limit marked by a frontier" (DeLanda, 2016, p. 110). Discontinuities are marked by lines that may be more or less rigidly territorialised, but there are also "lines of flight" along which an assemblage may become deterritorialised, reaching to spaces of possibilities that represent all the potential shapes that an assemblage might take. Thus, alongside the actual assemblage is posited the diagram of the assemblage that encompasses all its "possibility spaces," past, present, and future, and which takes the form of a multiplicity (DeLanda, 2002, 2011, 2016; Deleuze, 1995). Some variations in an assemblage are routine or at least knowable, and thus may be accommodated within the metric of the multiplicity. However, the structure of possibility space is segmented by "critical thresholds" where vectors of deterritorialisation reach a point where qualitative change occurs to the multiplicity and assemblages may dissolve to be replaced by new assemblages (Briassoulis, 2017; DeLanda, 2002, 2016; Deleuze & Guattari, 1988).

Here assemblage thinking speaks to the indeterminacy of globalisation. Interactions between assemblages (re-)produce globalisation by stretching, accelerating, and intensifying connections across space, but they may also remove components and weaken interdependencies. The trajectory of globalisation is not linear and its destination is not inevitable. Each interaction generates multiple "possible futures,"[3] virtual diagrams of how the assemblage might reshape, with alternatives of

incorporation and resistance, assimilation and hybridisation, ephemeral engagement and lasting change. Most of the globalising tendencies enacted by interactions between assemblages are mundane and incremental, but in instances where a critical threshold is passed the impact on an assemblage is dramatic and transformational.

2.3 | Places as assemblages

Crucially, these key elements of DeLanda's assemblage thinking apply not only to the forms of assemblage commonly discussed in the globalisation literature – corporations, industries, commodity chains, social movements, and international organisations – but also to places as assemblages. From this perspective, places are not merely sites in which globalisation is produced, but are actively engaged in the (re-)production of globalisation as assemblages interacting with other assemblages, and are changed and reshaped by these interactions. The heterogeneity, contingency, and indeterminacy of places has been emphasised in assemblage-informed research focused on processes of assembling and on places as meeting-points of multiple assemblages (for example Bonta & Protevi, 2004; Dovey, 2010; Farías & Bender, 2010; McFarlane, 2011; Rosin et al., 2013), but there has been limited direct application of DeLanda's characterisation of assemblages to places.

DeLanda (2006) himself presents places as assemblages, describing the material and expressive roles of components and discussing patterns of territorialisation and coding observed in cities, neighbourhoods, and regions. For instance, he describes cities with highly segregated neighbourhoods in terms of race, religion, or class as strongly territorialised assemblages, and those with greater mobility and mixing of the population as deterritorialised.

It follows that places, like all assemblages, are defined by the exteriority of their relations. The components of a place are not held together by any logical necessity, rather they are contingently interdependent (Anderson et al., 2012), with components that may be detached and plugged into other place-assemblages in which their interactions are different. Indeed, places are porous. There is constant movement of people, goods, vehicles, currency, information, animals, viruses, carbon particles, and an array of other entities in, out, and between places. The identity of such entities is not dependent on their relations within any given place-assemblage, and the place-assemblage is not fatally compromised by the loss of any one such entity. Rather, the alignments of relations and components that constitute a place are only ever temporary, even fleeting, and place-assemblages are always in a state of becoming (cf. McFarlane, 2011).

Yet, while places are "a momentary co-existence of trajectories and relations" (Massey, 2000, p. 229), they are also enduring entities with deep histories. A description of a place as an assemblage is only ever a snapshot, a representation that is immediately superseded by a new configuration. A place is thus, in DeLanda's terminology, a "multiplicity" of innumerable actual and virtual assemblages, comprising all the possible past, present, and future forms and capacities of the place (Briassoulis, 2017; DeLanda, 2016).[4] These possibilities are, however, limited by critical thresholds, such that while with each change to the composition of an assemblage there are multiple "possible futures" that could be actualised, these will have certain consistencies and parameters that ensure the durability of the place identity. Only when a critical threshold is breached does a place tip over into a new identity, with potentially radically different internal and external relations (Briassoulis, 2017).

The remainder of this paper discusses in more detail how these highlighted concepts can provide additional insights into the dynamics through which places are transformed in globalisation, and outlines a framework for application in case study research. In this we employ a vocabulary that is intended to avoid the terminological confusion inherent to discussing assemblages empirically, referring to a "place-assemblage" to describe a geographical place (a city, town, village, district) in a way that emphasises its form as an assemblage, and to "translocal assemblages" for assemblages that transcend specific places, with components that are spatially located in multiple localities. This distinction, we stress, is purely descriptive and does not imply any a priori differences in the properties or capacities of place-assemblages and translocal assemblages. Indeed, it is a fundamental tenet of our assemblage approach that places and social formations should be analysed according to the same principles, rejecting the a priori reduction of spatial forms (Anderson et al., 2012).

Following Sharma, we understand translocal assemblages to be "both situated (but not locked in place) and formed in articulation with processes that transcend and crosscut various spatial and temporal registers" (2008, p. 2; see also Kinkaid, 2019). This usage of "translocal assemblage" is broader than that deployed by McFarlane (2009), encompassing not only social movements but also corporations, commodity chains, diasporic communities, NGOs, consumer brands, cultural phenomena, social media networks and so on. However, it shares McFarlane's (2009) attempt to move away from the hierarchical connotations of Ong and Collier's (2005) "global assemblages," as well as his assertion that translocal assemblages "are not simply a spatial category, output, or resultant formation, but signify doing, performance and events" (McFarlane, 2009, p. 562).

Translocal assemblages, therefore, are not structures operating above place-assemblages in a vertical hierarchy, rather they connect and interact with place-assemblages and with other translocal assemblages across the same horizontal plane. In this reading of assemblage thinking, terms such as "global," "local," "national," and "regional" refer not to pre-determined scalar places locked in a vertical formation, but are expressions of coding – labels applied to assemblages that imply certain properties concerning the spatial arrangement of their parts and their alignment with political and legal authorities. Like all codes, they may be relatively weak or strong, and may be contested and over-written – the incorporation of new components into place-assemblages or attachment of entities to new translocal assemblages, for instance, can disrupt coding of what is "local."

However, our analysis is not entirely without scale. Scale exists as reach and magnification: reach in that some assemblages have components dispersed over a longer geographical distance than others; magnification in that the components of an assemblage may be opened up as assemblages in their own right – though not necessarily within a linear structure prescribed by an arborescent hierarchy (DeLanda, 2016). Understanding the relations of reach and magnification implicit in interactions between place-assemblages and translocal assemblages is part of our analysis of globalisation.

3 | GLOBALISATION AND PLACE

This section develops the application of assemblage thinking to analysis of how places are transformed through globalisation, working from the core principles outlined above. We mobilise the concepts of the exteriority of relations, territorialisation and coding, and multiplicity to explore the form and effect of interactions between places and translocal assemblages, the adjustment of place-assemblages, and the negotiation of possible futures respectively. Our discussion is purposely asymmetrical, we concentrate on changes in place-assemblages in line with our research question of how places are transformed through globalisation; the interactions between place-assemblages and translocal assemblages (as well as between translocal assemblages and other translocal assemblages) will have similar effects in the translocal assemblages, which according to our agnostic methodology can be analysed through the same framework, but this dimension falls outside the scope of this paper.

3.1 | Interaction: the exteriority of relations

The reproduction of globalisation in interactions between places and translocal assemblages is facilitated by the exteriority of relations. Interactions may involve the insertion of a new component into a place-assemblage, or conversely the removal of a component from a place-assemblage, and such exchanges may be read as expressions of globalisation when they contribute to the stretching, intensification, and acceleration of relations over space. For instance, a place-assemblage interacting with translocal assemblages with progressively greater reach, introducing into the place-assemblage new components transported over longer distances with properties that differ significantly from those of existing components.

Indeed, transformations in places that are commonly attributed to globalisation are outcomes of changes in the properties and capacities of both place-assemblages and their components. As DeLanda (2016, p. 73) describes, the properties of an entity are determined by its component parts, while its capacities are actualised by its relations with other entities. Thus, a new component attached to a place-assemblage retains its own properties, but its presence changes the properties of the place-assemblage, while the relations it forms with other components in the place-assemblage affects both its capacities and those of the other components.

Numerous examples have been observed in our research on globalisation in rural areas. For instance, foreign direct investment by American and Japanese companies in rural Ireland introduced new factories as components in the place-assemblages of towns such as Castlebar and Westport, changing the properties of the towns (e.g., the landscape, the economic and employment profile), and creating new capacities for other entities in the town, including, notably, significant skilled employment opportunities for women for the first time, and new opportunities for local suppliers.[5] More mundanely, the arrival of a McDonald's outlet in Newtown, Wales, in 2000 expanded by residents' capacities for eating and socialising, transforming these performative, expressive components in the place-assemblage. Sixteen years later, 30 per cent of residents surveyed for our research reported that they had eaten at or from McDonald's in the preceding three months.[6]

The capacities of a place-assemblage, however, are realised by its relations with translocal assemblages. Interactions with assemblages that form transport or communications infrastructure are especially important, engendering new capacities for travel, trade, and cultural exchange; yet the potential activation of new capacities in specific places may be conditioned by the properties of components in the translocal assemblage. DeLanda (2006) cites the example of steam locomotives whose mechanical properties and braking distance dictated intervals between railway stations and consequently the

morphology of suburbs around 19th-century cities. In the context of globalisation, the properties of aircraft are similarly affective.

The town of Gander developed in a remote part of Newfoundland due to the properties of commercial airplanes that necessitated refuelling on early transatlantic routes, introducing an airport into the forested locale, which in turn assumed a capacity to provide employment, attracting migrants from other parts of the province and internationally. Subsequent advances in the technical properties of aircraft removed the need for refuelling, reducing the capacity of Gander to attract international flights and weakening the intensity of its transnational connections.[7]

Moreover, globalisation effects occur through interactions involving entities that are concurrently components in a place-assemblage and in translocal assemblages. A factory, for instance, can be a component in a global production network, with the capacity to manufacture commodities; a component in a corporation, with the capacity to generate profit; and a component in a place-assemblage, with the capacity to provide employment. The relations and capacities of the entity may change in one assemblage without affecting its capacities in another: a factory might be taken-over and transferred from one corporate assemblage to another, or might switch from making one product to another, without altering its capacity to provide employment. The American-owned pharmaceutical plant in Westport, Ireland, mentioned above, for example, shifted from producing contact lens solution to botox, while seamlessly continuing as the town's major employer.

However, DeLanda (2016) observes that the capacities of an entity include capacities to affect and capacities to be affected. The relations that an entity has in an assemblage, therefore, may affect its properties, and as the properties of an entity are consistent across all the assemblages in which it may be a component, changes to its properties may lead to changes in its relations in other assemblages and thus to its capacities in those assemblages. In the example of a factory, a corporate decision to mothball or close a branch plant affects the factory's properties as key components such as workers and machinery are removed, compromising its capacity to provide employment in the place-assemblage in which it is located.

As an illustration, the largest employer in Newtown, Wales, during the 1980s and 1990s was Laura Ashley, a local textiles firm that had achieved international reach in sales and operations. Its acquisition in 1998 by a Malaysian investor, attaching the company to a new corporate assemblage, initially had little impact on its capacities in the Newtown place-assemblage. Over the following years, however, managerial and production functions were relocated to Asia, removing components from the Newtown operations. With altered properties, the relations of the Newtown site within the place-assemblage changed, deactivating its capacity to provide employment, and modifying the properties of Newtown as a place.[8]

3.2 | Adjustment: territorialisation/deterritorialisation and coding/decoding

In line with the exteriority of relations, the identity of a place persists even as its components and internal relations change through interactions with translocal assemblages. Such changes nonetheless produce minor modifications in the properties of a place, including its coherence, homogeneity, and boundedness, as captured on the parameter of territorialisation. Indeed, if as DeLanda observes, "migration and trade across national borders tend to complicate the effort to create a single national identity, and to this extent they may be considered deterritorializing" (2006, p. 117), similar interactions involving the movement of entities across the boundaries of a town, city or region will pull against its integrity as a distinctive and coherent place.

A new component introduced into a place-assemblage, such as a business, a crop or a migrant worker, increases the diversity of the place's constituent parts; yet, the removal of a component can also be associated with deterritorialisation if the detached entity enacted capacities to connect other members of the place-assemblage, such as a large employer or an entertainment venue.

Migration can be deterritorialising in both destination and source localities. Migrants arriving in a place increase the diversity of the population and introduce new material and expressive components, including food, language, and cultural practices. In source localities, out-migration can weaken the density of social ties, undermine the viability of shops and schools, increase social inequalities, and puncture place boundaries as component family and community networks are stretched over longer distances.

Gort in western Ireland, for example, was transformed by immigration from 1999 onwards from a largely ethnically and culturally homogenous Irish rural town into a multicultural community with Brazilians comprising 40 per cent of the population. The Brazilian migrants imported foods, fashions, and cultural practices, and although relations were good, the social space of the town was segmented as they established their own churches and specialist shops, while tending not to patronise the traditional pubs that played an important role in tying the Irish community together (see Woods, 2018a). Many of

the Brazilian migrants in Gort came from the village of Vila Fabril in Goías and remained part of the community there, visiting each year and sending back remittances and consumer goods. Yet, as a place-assemblage, Vila Fabril also deterritorialised from a community dominated by a single employer to one with members dispersed in different countries and with inequalities of wealth displayed in the landscape as remittances were invested in renovating houses (see Maher, 2010; Woods, 2018b).[9]

Deterritorialisation of place-assemblages can be associated with decoding as the formal and informal codes that order and cohere a community lose their salience – as newcomers bring their own religious, ethical, and political frameworks, or just have less capacity to be affected by the subtle enforcement of community norms through gossip and social sanction (cf. DeLanda, 2016, p. 53).

Changes in coding also result directly from interactions between place-assemblages and translocal assemblages, through the over-coding of places and their components within larger assemblages of which they are part. As components in nation-state assemblages, places are routinely over-coded by the state, with the capacity for enforcement through legal penalties. Such over-coding reproduces globalisation when it is used to enact compliance with international values and standards, such as for animal rights or nature conservation, that may conflict with traditional local practices. Critically, the over-coding applies to both material and expressive components of place. A forest coded in a place-assemblage as a resource for food, fuel, and building material may be over-coded by the state as a protected landscape, but it is the simultaneous over-coding of hunting and logging as illegal activities that limits the capacities of local residents to exploit the forest (cf. Bonta & Protevi, 2004).

Over-coding was experienced by fishing outports in Newfoundland in 1992, when, in response to transnational concerns about depletion of cod stocks by the global fishing industry, the Canadian government imposed a moratorium on the North West Atlantic cod fisheries. The moratorium changed fishing crews' capacities in relation to the fish, but also their capacities in relation to their families and other components in the place-assemblage of the outport, such as processing plants and haulage firms. Deterritorialisation occurred as the coalescence of the outports around fishing collapsed, economic activity diversified, and residents dispersed through out-migration, accompanied by decoding as the cultural impregnation of fishing in community calendars, social routines, and landscape was diminished (see Woods, 2015, 2018b).[10]

However, as processes of territorialisation and deterritorialisation are iterative and cyclical, place-assemblages are reterritorialised when introduced components become numerically dominant, or as they exert capacities to inhibit competition. Farming towns in Brazil, such as Dom Pedrito in Rio Grande do Sul, have reterritorialised with the expansion of soybean cultivation for export. The insertion of soy in Dom Pedrito was initially deterritorialising, as land use and production diversified from livestock ranching, but the locality reterritorialised around soy, reinforced by the relative financial coding of soybeans compared with other commodities, and by the properties of soy and components in its assemblage, such as herbicides, that have suppressed capacities for other farming sectors (see Woods, 2021). The reterritorialisation is articulated not only in land use and the appearance of the landscape, but also in the reorientation of the local service economy towards businesses supporting soy cultivation.[11]

Reterritorialisation also arises from proactive responses by human and institutional actants to reconnect divergent components of place or to assert new inclusive identities, creating new entities with capacities to unite other components in the place-assemblage, from material components such as roads, transit systems, and community spaces, to expressive components such as language classes and social events. In Gort, efforts mobilised to connect Irish and Brazilian residents included an annual Brazilian festival, integrated sports teams, and a bilingual newsletter, reterritorialising the town around a new multicultural identity (Woods, 2018a).

Through processes of deterritorialisation and reterritorialisation, decoding and recoding, the structures and identities of places adjust to changes in the properties and capacities of place components. Yet, as different places adjust in different ways to similar interactions with translocal assemblages, an uneven geography of globalisation emerges through the negotiation of possible futures, as the next section discusses.

3.3 | Endurance: multiplicity and negotiating possible futures

As interactions between place-assemblages and translocal assemblages introduce and remove components, reconfigure connections, activate and deactivate capacities, reterritorialise and recode, places are constantly being re-assembled, always becoming (Deleuze & Guattari, 1988). Moreover, with each change there are multiple possible forms, or possible futures, that place-assemblages could take. They exist virtually until actualised, but nonetheless are part of the multiplicity of the place with a presence in the present – debates around new developments or land or business transactions frequently involve

contrasting imagined futures. Possible futures that are not actualised become alternative possible histories or presents in the multiplicity and may resonate in local culture as ideas of what might have been.

Some possible futures can be anticipated and planned for. The over-coding of components and relations within a place assemblage seek to differentially suppress and enable capacities that would actualise different possible futures. Yet, possible futures might also arise from interactions between assemblages, or between components, that cannot be foreseen or theorised. Thus, following DeLanda (2011), the identification of possible futures is an essentially empirical matter, as "it would never be possible to fully characterize the multitude of possible capacities inherent in the formation of assemblages" (Anderson et al., 2012, p. 185).

Neither, though, is the actualisation of some possible futures over others purely random. It is a function of the properties of components and the relations between them, such that "particular forms of transformation are often more likely than others" (2012, p. 180). Accordingly, an assemblage approach to globalisation and place accommodates local agency, including the capacity of communities to manage potentially destabilising impacts of interactions with translocal assemblages. The capacity of a place-assemblage to reconfigure around specific possible futures may be conditioned by external influences, such as over-coding by the state or the downward causality of a shared component's relations in a translocal assemblage, but it is not determined by them. Agency also arises from the properties and capacities of the human and non-human components of the place-assemblage and how these are enrolled, coded, and mobilised, with both enabling and constraining effects (Bennett, 2005, 2010).

In most cases, changes to places from interactions with translocal assemblages are incremental, such that the place-assemblage shifts minutely within the multiplicity and the integrity of place identity is maintained. It is in this sense that places endure over time. Some changes, in contrast, have a greater catalytic effect as they impact on critical elements, or "assemblage converters," that are central to the territorialisation or stability of the place-assemblage (Deleuze & Guattari, 1988, p. 325; also Bennett, 2010). The closure of a factory has more impact than a store selling a transnational soft drink brand, even if both can be read as expressions of "globalisation" (Heley et al., 2020). Even substantial changes may be anticipated and managed through adjustments to internal coding, or through engineered processes of reterritorialisation to incorporate and assimilate new components and connections. However, as globalisation-linked processes of deterritorialisation proceed towards the limit of the plane of consistency – an idealised, virtual smooth space in which place would not be differentiated (DeLanda, 2016), paralleling the hypothetical homogenous space of total globality – critical thresholds may be crossed where places experience fundamental qualitative transformation.

In extreme instances, the place-assemblage itself may collapse or dissolve. Acland, in Queensland, Australia, passed a critical threshold in 2011 when houses in the town were bought and dismantled by a mining company to facilitate open cast coal cutting (for export to Asia), removing its capacity to sustain a population and curtailing alternative possible futures in which mining might have been restricted due to environmental impacts on residents, or blocked altogether by local opposition. With residents and buildings removed, the town of Acland ceased to exist.[12] Equally, the approach of critical thresholds can trigger lines of flight that create new assemblages and pursue new possible futures, both progressive and reactionary: out-migration from deindustrialising localities; xenophobic anti-immigrant movements; agroecology initiatives as alternatives to agribusiness; and so on.

4 | APPLYING THE ASSEMBLAGE FRAMEWORK

DeLanda's understanding of assemblages as contingent singularities emphasises the importance of empirical enquiry to describe and explain the dynamics of change and stability within any given assemblage. The transformation of individual places through globalisation cannot be adequately modelled from general principles and top-down assumptions, but requires empirical research to capture the unique, contingent, and situated dynamics through which interactions between place-assemblages and translocal assemblages trigger adjustments in the properties, relations, and capacities of a place and its component parts. Concepts of the exteriority of relations, territorialisation, coding, and multiplicity, discussed above, provide insights into these dynamics, not as laws but as guidance for a methodological framework, translatable into questions for case study research, as outlined in Table 1.

However, assemblage thinking also recognises the limits of empirical analysis, conceding the impossibility of comprehending all possible forms and capacities of an assemblage. It would be impractical to attempt to comprehensively document all the interactions between place-assemblage and translocal assemblages that constitute globalisation, or all the potential internal adjustments and possible futures. An assemblage analysis of place and globalisation therefore needs to start with a single identified interaction and use the questions in Table 1 to trace connections and consequences. This

TABLE 1 An assemblage framework for case study analysis of the impacts on place of interaction with a translocal assemblage

Interactions	Territorialisation and coding	Possible futures
What is the form of the interaction? What is the reach and form of the translocal assemblage (TLA)? What components are introduced to or removed from the place by the interaction? How does the addition/removal of components change the properties of the place? How does the addition/removal of components change relations between components of the place? What capacities are activated or deactivated both for new and for existing components of the place? Does the interaction involve components of the place that are also components in a TLA? Have the properties of the component been affected by (changing) relations in the TLA and has the change in properties affected its relations and capacities in the place?	Does the interaction affect the territorialisation of the place-assemblage (e.g., increased diversity of parts, weakened boundaries)? Does the interaction affect the internal coding of the place (by-laws, regulations, social conventions, etc.)? Does the interaction involve over-coding of the place and/or its components by a TLA? How does over-coding affect the capacities of components of the place (including people)? What capacities enable the over-coding to be enforced? Does the interaction involve an "assemblage converter" that connects other components in the place? Has the place started to cohere around new properties or identities (reterritorialisation)? Have new material or expressive components been introduced in the place to strengthen or adapt its coherence or identity in response to interactions with TLAs?	What possible future forms of the place following from the interaction can be identified? What capacities are required to be mobilised for each possible future to be actualised? How are capacities to actualise a possible future enabled or constrained by the properties and capacities of components in the place-assemblage? How are capacities to actualise a possible future enabled or constrained by the coding of a place and/or its components? How are capacities to actualise a possible future enabled or constrained by the properties, capacities, or coding of a TLA? Have local human and organisational actants anticipated and planned for possible futures from the interaction? Do they have capacity to affect other components to achieve a preferred outcome? What would be the critical threshold at which the place fundamentally changes? Has a critical threshold been reached as an outcome of the interaction?

fundamentally countertopographic approach eschews top-down readings of globalisation and respects Latour's (2005) principles for researching the global as well as Massey's (2005) relational conceptualisation of place.

The application of the framework can be illustrated with the case of Nambour in Australia, where a century-old sugar industry was ended by the closure of the Moreton Sugar Mill in 2003.[13] The mill closure was attributed to global competition for markets, suggesting linear causality between globalisation and the impacts for the town. Yet, the same global competition had been weathered by other Australian mills without closing, and previous mill closures elsewhere had not always led to the end of local cane-growing. The questions in Table 1 can help to uncover the dynamics that produced the unique outcome.

Historically, Nambour was territorialised around the mill, which pre-dated the town. Although deterritorialisation had occurred with economic diversification and lifestyle migration, the mill remained an "assemblage converter," including connecting 10,000 hectares of caneland to employment in the town. The mill was also a component in the global sugar industry assemblage and the Australian sugar industry assemblage – in which it exercised capacities to supply crushed sugar – as well as in the corporate assemblage of its owners, and was an assemblage in its own right, with components including buildings, machinery, workers, cane, fields, farmers, and transport.

During the late 20th century, the relations of the mill in the global sugar assemblage were modified by industry restructuring and deregulation, with expanding markets in Asia and increased, lower-cost, production in countries such as Brazil and Thailand. The capacities of Australian mills to respond to the changed market conditions were constrained by the rigid coding of the Australian sugar industry with a single-desk exporter, production quotas, and assigned caneland, such that a mill could only improve its competitiveness by adding more cane fields within its prescribed territory. For Moreton Mill, however, the capacity to expand its caneland was limited by its relations in the Nambour place-assemblage. Existing caneland was protected by coding through zoning regulations, but acquiring new land for cane-growing involved competing with other agricultural, tourism, and residential land uses that offered greater returns.

In 2000 Moreton Mill was sold by UK-based Tate & Lyle to Belgian corporation Finasucre. The mill had transferred between corporate assemblages before without affecting its properties or capacities in the place-assemblage, but acquisition by Finasucre was followed by recoding as a loss-making asset for disposal.

The mill closure reflected a capacity to be affected by relations in the corporate assemblage that changed the mill's properties and in turn its relations and capacities in the place-assemblage. Yet, at the point of closure several possible futures

co-existed. The mill could have been sold to new owners, but a buy-out attempt by local farmers failed. Canegrowers might have switched to supplying another mill, but the properties of sugarcane, requiring crushing within 16 hours of cutting, excluded this option for all but a few farms. The cane might have been supplied for ethanol, attaching to a new industry assemblage, but the required processing plant and favourable coding through government policies to guarantee the market could not be assembled. For a time, a variant of this possible future was actualised, as a new assemblage was formed selling sugarcane from Nambour as cattle feed in Japan and South Korea. Yet, the venture collapsed as its capacities were compromised by poor harvests and a machinery fire, disrupting cash-flow.

With these possible futures discounted, the local sugar assemblage reached a critical threshold beyond which it could not be sustained. The assemblage was dismantled, with caneland converted as sites for housing, golf courses, turf-cutting and cattle grazing, remaining as components in the place-assemblage but with new relations and capacities. The properties of Nambour as a place changed with the removal of the mill and cane fields as material components, yet it held back from the critical threshold of losing its identity as a "sugar town" as elements of the industry persisted as expressive components through murals, sculpture, and the enrolment of machinery and parts of the cane tramway in heritage attractions.

5 | CONCLUSION

Engagement with assemblage thinking can enrich geographical research on place and globalisation by addressing shortcomings in the empirical operationalisation of existing relational perspectives. Although relational principles are now pervasive in geographical accounts of globalisation, case study applications to understanding the transformation of specific cities or regions have been limited. This lacuna follows in part from a lack of elaboration in relational theory about precisely how shifting configurations of relations produce observable changes in physical places. In this paper, we have argued that an assemblage ontology can help to fill this gap, directing attention to processes of interaction and adaptation, while maintaining an emphasis on the heterogeneity, indeterminacy, and multiplicity of relations and their intersection in place.

In particular, we have employed principles derived from DeLanda's rendition of Deleuzoguattarian assemblage thinking to construct a framework for empirical enquiry into how places are transformed through "globalisation." In this, we understand globalisation to be an expression of interactions between assemblages, yet depart from previous studies by recognising that places are not merely sites in which such interactions occur, but are themselves assemblages that interact with diverse translocal formations.

Accordingly, dynamics such as global economic restructuring or international migration can be shown to impact on local economies, societies, and landscapes by altering the components that make up a place, their coherence, and their coding in laws, social conventions, and cultural representations. These changes affect the properties and capacities of places and place-based actors; however, an assemblage approach also challenges deterministic discourses of globalisation. Rather it holds that there are multiple possible futures arising from any specific interaction and that the prevailing of one outcome over others is a product of mediation involving distributed agency.

As outlined in the final part of the paper, these conceptual insights provide a framework for case study analysis of the reconstitution of cities, regions, and other places in relation to global processes. They do not in themselves form a new theory of globalisation, but make a methodological contribution to facilitating more detailed and nuanced empirical inquiries that may draw on wider relational theories for interpretation and explanation. In this way, we suggest, assemblage thinking can invigorate relational perspectives on globalisation and advance understanding of the production of uneven geographies in which different places "stand in contrasting relations to the global" (Massey, 2005, p. 10).

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author in the form of anonymised interview transcripts on reasonable request.

ORCID

Michael Woods https://orcid.org/0000-0003-3813-4138
Francesca Fois https://orcid.org/0000-0001-6908-9726
Jesse Heley https://orcid.org/0000-0001-7876-2337
Samantha Saville https://orcid.org/0000-0001-6307-0573
Marc Welsh https://orcid.org/0000-0002-9482-9164

ENDNOTES

[1] We use 'assemblage thinking' in preference to 'assemblage theory' in order to emphasise the diversity of contributions within this literature, which do not offer the coherent unified model implied by the term 'theory'.
[2] Ong and Collier's (2005) use of the term 'global' is not necessarily spatial but also implies universality or interoperability.
[3] We use 'possible futures' in preference to DeLanda's term 'possibility spaces', which we consider to be confusing in geographical analysis given its derivation from mathematical notions of space. The alternative formulation of 'spaces of possibility' employed by other Deleuzian scholars is similarly problematic in this context as it is more commonly associated with progressive, utopian imaginaries. 'Possible futures', we contend, captures the sense of multiple possibilities enfolded in the moment of becoming, while also mirroring DeLanda's reference to 'possible histories' (2016, p. 172).
[4] DeLanda uses 'multiplicity' in a different sense to Massey. Where Massey (2005) refers to multiplicity as contemporaneous plurality to recognise the co-existence in space of multiple trajectories and heterogeneous ways of being, DeLanda, following Deleuze, employs multiplicity as a noun to refer to the totality of all possible forms of an assemblage. These ideas are related, but the precise definition of the term is different.
[5] Interviews with local stakeholders, October 2015 and March 2017, and analysis of press articles, company documents and previous studies and reports.
[6] Door-to-door interviewer-administered household survey conducted September 2016.
[7] Interviews with local participants, August 2016, and archival research.
[8] Interviews with local stakeholders between 2014 and 2018 and analysis of press reports, archives and web content.
[9] Interviews with local stakeholders in Gort, October 2015, and return migrants in Vila Fabril, August 2017, and data from field observations, press reports, official statistics, and previous studies (see in particular Maher 2010).
[10] Interviews with local stakeholders, field analysis, and analysis of press articles, reports, census statistics, historical studies, and other documents held by the Centre for Newfoundland Studies and the Newfoundland and Labrador Provincial Archives, conducted August 2016.
[11] Interviews with farmers and local stakeholders and field observation, March 2018, and analysis of statistics and web content (with assistance from Rodrigo Gisler Maciel and Juliana Gomes Moreira, Universidade Federal do Rio Grande do Sul).
[12] Interviews with residents and campaigners, field observation, press articles, legal papers, company publicity, and other documents, May 2018.
[13] Based on analysis of press articles, government and industry papers and reports, other documentary sources, and field observation, October and November 2014. For more information and full list of sources, see 'The making and remaking of a cane countryside', https://www.global-rural.org/story_map/sugar-in-nambour-aus/

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