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Conceptualizing demographic shrinkage in a growing region – creating opportunities for spatial practice

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Abstract

Demographic transitions have an impact on the landscape and urban development. However, when planning for demographic growth, the concept of demographic shrinkage is seldom considered. Consequently, many opportunities for qualitative landscape interventions and urban development remain unnoticed. This article proposes a conceptualization for demographic shrinkage within the context of the growing region of Flanders, Belgium. Demographic statistics, indicators for the risk of shrinkage, and local opinions from the region are cross-referenced with the shrinking cities discourse. Our research shows that Flanders is shrinking in some parts, has a risk of shrinking in many more areas, and should shrink in strategic places from a resilience perspective. Contrary to demographic shrinkage in other parts of Europe and the world, which covers vast territories and results in urban decline, demographic shrinkage in the region of Flanders manifests itself very locally and on a small scale. The research suggests introducing the use of “shrinkage in growth” to implement its specific opportunities and overcome the possible negative effects of shrinkage. The concept of shrinkage in growth implies a systemic understanding of different scales and an integrated spatial practice that goes beyond the strategy of constructing more housing in order to attract more inhabitants.

1. Introduction

1.1. Demographic shrinkage, urban shrinkage and strategies beyond growth

Demographic shrinkage is hardly considered or included in a spatial policy, design and planning when it is not an urgency on a large scale (Haase et al., 2017, Nelle et al., 2017). The global population is growing, and the main discourse that spatial planning, design and policy share is one of accommodating sustainable urban growth (LSE Cities, 2016, United Nations, 2017). Globally, strategies are developed for more people on the same surface area and for the maintenance of the open space or landscapes that are challenged by this demographic pressure. However, many places are shrinking in population, and in the future, even more places are predicted to face shrinkage despite global growth in population (United Nations, 2017, Eurostat, 2018).

In spatial practice, demographic shrinkage or a decline in population has been recognized as one of the main drivers of the complex phenomenon of 'urban shrinkage' (Haase et al., 2013). Urban shrinkage, also called urban decline, has been conceptualized "*as an empirical phenomenon resulting from the interplay of changing drivers of shrinkage at different spatial levels (from regional to global) that produce a decline in population at the local scale ... These drivers may be related to economic decline, demographic change, and settlement system changes in the form of suburbanization and sprawl."* (Haase et al., 2013:4). Places that are considered to be shrinking, are losing, temporarily or not, at least 10% of their inhabitants, or more than 1% annually (Oswalt & Rienets, 2006:156). The phenomenon of urban shrinkage is primarily discussed in a planning discourse focusing on 'shrinking cities' (Oswalt, 2006, Großmann et al., 2013, Haase et al., 2013, Hospers, 20134, Berndt, 20165, Nelle et al., 2017, Haase et al., 2017, Mallach et al., 2017), which distinguishes itself from the dominant 'planning for growth'

discourse. In these places, demographic shrinkage has not always been negative (Hospers, 2013): in the past decade, the lack of demographic pressure has turned some of these places from problematic cities into dynamic places for transformation, where knowledge is developed for 'strategies beyond growth' (Leick & Lang, 2018). In this sense, a shrinking city can indeed be considered as "*a laboratory for experiment and opportunity for societal change*" (Oswalt, 2006).

Despite this potential, in most cases of significant demographic shrinkage, the main focus is on short-term solutions to attract more inhabitants or overcoming the negative effects of the accompanying urban decline (Hospers, 2013 in general, Tietjen et al. 2016 for Denmark). Indeed, strategies beyond growth are an exception to be implemented in systems with growth (Leick & Lang, 2018). This focus leaves opportunities untouched, for instance concerning the implementation of ecosystems services (Haase et al., 2014) and the development of open space networks along with demolition plans (Frazier & Bagchi-Sen, 2015).

Efforts have been made by the European Union, for example, to help shrinking cities and also regions that are in a context of growth to receive attention from their national policy levels (Haase et al., 2016). Still, the term 'shrinkage' continues to have a negative connotation, and its suitability for policy has been questioned (Hospers, 2013, Audirac, 2018). In general, there is a lack of understanding of integrating the concept of demographic shrinkage into spatial practice. This lack of understanding is especially the case in territories with both demographic growth and shrinkage, where it does not lead to large scale urban shrinkage.

This paper aims to gain insight into the existence of demographic shrinkage within regional/overall growth and to explore the impact of the concept of demographic shrinkage for a spatial practice focused on growth. This paper, therefore, makes use of the region of Flanders, the northern region of Belgium. Here, shrinkage is not yet integrated into the policy and planning

agenda, nor is it a common context for its contemporary spatial practice. More specifically, our objectives are to explore the existence of demographic shrinkage for this region and to interpret demographic shrinkage in relation to its spatial practice.

1.2. The growing region of Flanders

The region of Flanders is growing in population. This demographic trend is predicted to continue in the coming decades (Statistiek Vlaanderen, 2015). The region is often described as a case with a high population density and a fragmented and multifunctional open space (Bomans et al., 2010, Crols et al., 2017, Poelmans and Van Rompaey, 2009). It is also a region where the holistic approach towards landscape is being introduced (Van Damme et al., 2015). At the same time, over the past decades, the built environment has been facing an ongoing development of sprawl with allotments (Loris & Pisman, 2016) as well as ribbon development (Verbeeck et al., 2014). The conversion of open space to built land is still ongoing at the speed of 6ha per day (Crols, 2017).

In response to this situation, the Flemish government launched the *White paper of the Spatial Policy Plan for Flanders* in 2016. Spatial planning at the provincial and municipal level use the Flemish guidelines. With the launch of the *White paper*, a public debate was triggered in the region. The debate addressed diverse themes such as biodiversity, energy and food production. However, as if it were a taboo, both demographic and urban shrinkage were almost absent in the spatial policy and the public debate.

In this context, the Netherlands, a neighboring country of Flanders/Belgium, offers a different perspective. Although the country predicted continuous growth and shrinkage itself remained relatively small from a demographic point of view (van Steen & Pellenbarg, 2010), today they have an active national policy, a public debate and a strategy for demographic and

urban shrinkage (Verwest, 2010). Additionally, its scholars have been active on the topic of shrinking cities (Hospers, 2013, Notten, 2017, Neimed, 2018). The Netherlands and Flanders share a similar horizontal urbanization pattern, though characterized by less sprawl in the Netherlands, and face several similar long-term policy and planning questions (Architecture Workroom Brussels et al., 2017). Nonetheless, demographic and urban shrinkage is a policy and planning topic that has hitherto only been developed in the Netherlands (Rijksoverheid Nederland, 2018). The question is, in the absence of a planning and a policy strategy for demographic and urban shrinkage, what does the concept of shrinkage add to the spatial practice of growth?

2. Methods: three lenses on shrinkage in growth

This article aims to generate insight into a concept that has limited theoretical and practical background in spatial practice, as is the case for the studied area. Therefore, to explore the existence and interpret shrinkage in growth, the issue has been considered through three lenses: first, actual demographics; second, indicators for risk of shrinkage; and third, spatial policy and its public debate within the region.

2.1. Current demographic data

The first lens focusses on identifying existing population loss in the region. It brings together general trends of specific indicators for demographic change (natural balance, migration and age distribution), and the population statistics at the level of Flanders. The population statistics are analyzed at the level of municipalities using the most local data available, that of sub-municipalities, which are the municipal borders before municipal fusions took place in the 1960-70s. Available statistical data from 2005 to 2015 were used for the specific demographic

indicators for the entire region (Statistiek Vlaanderen, 2015), and more local data of the population and households for the municipalities and sub-municipalities (Statistiek Vlaanderen, 2015, Province of West-Vlaanderen, 2015). This study then also zooms in on the sub-municipalities of the region of the Westhoek in the Western periphery of Flanders. On this scale, the definition of shrinking cities, *i.e.*, 10% population loss or 1% annually, as recognized by Oswalt & Rienets (2006), has been used to address the significance and put the results in perspective.

2.2. Risk of shrinkage

Second, we looked through the lens of the probability of shrinkage for the future. Demographic shrinkage needs a broader set of indicators than current demographic data, as it can be a breaking point rather than a phenomenon following the current trend (Vermeulen et al., 2016). A literature review led to the selection of Vermeulen et al. (2016) as a primary source because it links demographic shrinkage and growth to spatial planning and policy. They developed an understanding of this risk factor of regional shrinkage for the Netherlands based on the agglomeration force of regions, and the question where to build and where not to build. Three indicators were included in their work: current demographic shrinkage, ageing of the population and average regional house prices.

The first indicator of current demographic shrinkage is derived from the knowledge that shrinkage is more persistent than growth in the middle-long term and thus easier to predict (Glaeser, 2011, Glaeser & Gyourko, 2005). Current shrinkage that started less than ten years ago is an indicator for future shrinkage in the short term. Current trends, however, do not relate to what is happening beyond the middle long-term, i.e., after 20-30 years (Vermeulen et al., 2016). In the long term, without external immigration, a large ageing population can be an indicator for

the risk of shrinkage, since a higher mortality rate than birth rate is one of the causes of shrinkage (Vermeulen et al., 2016). Lastly, a regional house price lower than the national average (or Flanders in our case) is an indicator for the attractivity between regions: A high regional housing price predicts external investment in additional housing, which can make the population grow, while a low regional housing price indicates a region less attractive for investment, and a stagnating population eventually shrinks (Vermeulen et al., 2016).

The combination of the respective data for these indicators in the region of Flanders identifies locations with possible future shrinkage. Municipal demographic data for 2005-2015 (Statistiek Vlaanderen, 2015), municipal ageing profiles of the Study service of the Flemish Government (Schockaert et al., 2016), and regional housing prices for Flanders included in Vermeulen et al. (2016) reveal a risk of shrinkage. These layers were combined in graphic software.

2.3. Opinions on the spatial transformation of the region

Most focus is put on the third lens. This lens contains an analysis of a broad range of opinions of key informants and experts on the envisioned spatial transformation of Flanders. In the analysis, the opinions are linked to an interpretation of demographic and urban shrinkage. This lens aims to define the possible complexity of introducing demographic shrinkage in the regions spatial practice.

Specifically, data was collected in two ways: media analysis and interviews. First, opinion pieces with the tag ‘betonstop’, as the White Paper of the Spatial Policy Plan for Flanders was more commonly known, were analyzed from three large newspapers in Flanders (De Morgen, De Standaard and De Tijd) between the period of the 30th of November 2016 (the day the white paper was approved by the Flemish government) and June 2017 (when the

publishing of reactions slowed down again). Additionally, the analysis includes opinions from shorter articles beyond the selected timeframe and from other sources to the extent that they added novel arguments. A total of 111 articles were found. From these, 28 articles were extracted, containing 32 distinct opinions from the point of inhabitants, politicians, experts from architecture, urban and landscape planning and real estate. These 32 opinions were then analyzed and coded regarding the following: the perspective from which they were expressed (*e.g.* policy maker, designer, inhabitant,...), whether the evaluation of the topic was neutral, positive or negative, which arguments were put forward, and whether the planning-related complexities put forward were linked to demographic and/or urban shrinkage.

Second, in parallel to the media analysis, interviews were conducted with key informants from the areas with a high risk of shrinkage and experts related to sectors that could benefit from a planning with shrinkage. This means both people with relevant, everyday experience, i.e., inhabitants or former inhabitants of peripheral places, as well as experts working in urban and landscape planning are included. Interviewees were selected based on their complementary experience with the national, provincial or local planning level and a balanced presence from different areas in the region. Twelve unstructured interviews were held with (former) inhabitants of peripheral places, four semi-structured interviews with spatial planners on different policy levels, and informal interviews with experts working on the theme of open space and spatial planning. Saturation point was reached at the end of 2017. All interviews were conducted on the existence of shrinkage and the opportunities of shrinkage within Flanders.

3. Results

3.1. Is there shrinking in a growing region? The demographic approach.

Flanders is a region experiencing overall growth (Schockaert et al., 2016). However, breaking down this growth into more specific sources identifies external migration as the leading cause of growth in the region in recent years (Schockaert et al., 2016). As for the age distribution, the group aged 65+ is growing faster, while the percentages of the group of aged 0-18 and aged 18-64 have already been declining the past years (plan.be, 2017) (fig. 1).

However, more fine-scaled data analysis reveals that net shrinkage is also present in the region. Crols et al. (2017) present the highest resolution insights into demographic changes. Their research shows a pattern for 2001-2013, where growth and shrinkage alternate on a small scale, almost between neighborhoods (Crols et al., 2017: fig. 3b)[1].

For our timeframe (2005–2015) net demographic shrinkage is occurring in 64 out of the 308 municipalities (statistieken.vlaanderen.be, 2019) (fig. 2). Zooming in to the scale of sub-municipalities shows a different, more dispersed pattern of shrinkage. Taking the region of the Westhoek as an example, i.e., the most peripheral and rural region in the west, 5 out of 18 municipalities underwent a population decline during the period 2005–2015 (Province of West-Flanders, 2015) (fig. 2). The region consists of 90 sub-municipalities, 40 of which experienced population loss between 2005 and 2015 (fig 3) and for 5 out of these 40 this was more than 1% annually.

[1] Their maps are based on the population difference maps for a 300m resolution for 1986-2001 and 2001-2013. One should notice, for the period 1986-2001 (fig 3a of Crols et al., 2017) demographic decline is much more clustered in inner cities and cores, while growth is found in the ongoing suburbanization. This is a much different pattern than more recent years where "*decrease in population is mostly limited to rural areas, with some neighborhoods at the edges of cities as exceptions.*" (Crols et al., 2017).

Lastly, the evolution of households (fig. 3) provides insight into whether net demographic shrinkage can be spatially linked to a thinning of households or a vacancy of housing (Vermeulen et al., 2016:110). Fifteen out of 40 shrinking sub-municipalities have faced a decline in households, so the decline in households is considerably less than the net demographic population decline, which indicates a general trend of thinning of household size. On a more local scale of sub-municipalities (fig. 3), as with the net demographic statistics, household shrinkage is also clustered in some areas of the territory.

In summary, the existence of demographic shrinkage appears when considering more specific and more local data. Although overall demographic shrinkage is small in the region of Flanders, it is more widespread than regional, and even municipal statistics suggest. In certain places, it is clustered significantly, both for net demographic population and for households.

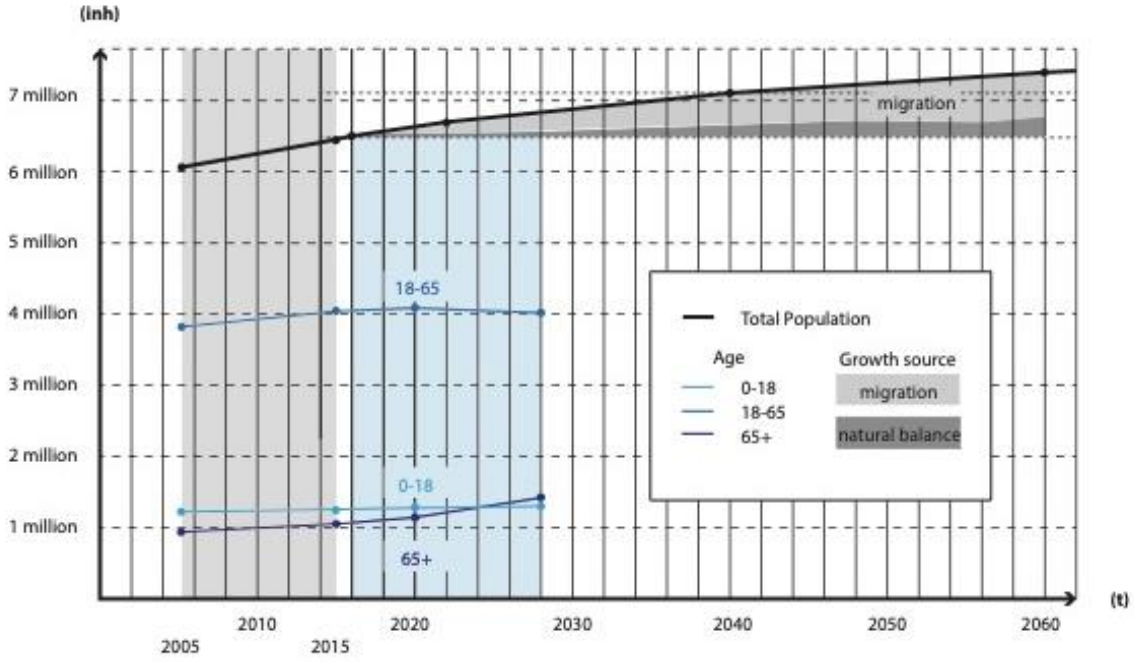
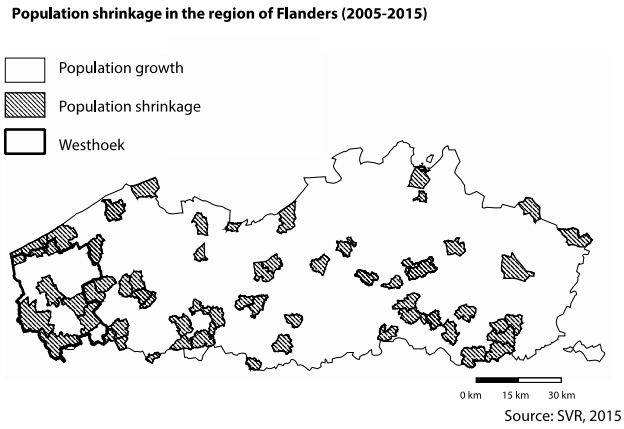


Figure 1. More specific demographic data and prognoses for the region of Flanders (modified from: plan.be, 2017; Statistiek Vlaanderen*, 2015)*



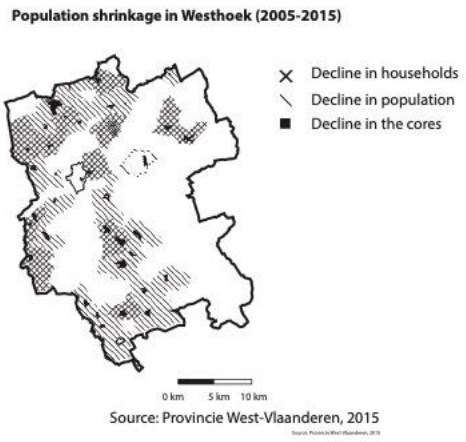


Figure 2. Shrinkage in the municipalities of the region of Flanders (source: Statistiek Vlaanderen*, 2015)*

Figure 3. Shrinkage in the sub-municipalities of the Westhoek (source: Province of West-Vlaanderen, 2015)

3.2. Future trends: Indicators for the risk of shrinkage.

Demographers of the Flemish government have calculated that due to the ageing population and declining birth rate, without external migration, the entire region would shrink from 2048 onwards. This shrinkage would last until 2056 (plan.be, 2018). However, leaving out migration, most municipalities will be affected by a negative natural balance before this time (Schockaert et al., 2016:16). In the study of the Study service of the Flemish Government, municipalities have been given different profiles. Three categories of municipalities are included in the layer ‘ageing’ in Fig. 4: (i) municipalities with a negative natural and migration balance today, (ii) municipalities with a risk of shrinkage on the short term that face a strong early ageing, i.e., with a relatively high percentage of the age 80+ and low percentage of 20 to 39 years old, iii) municipalities with a strong late ageing that have a relatively high percentage of the age

65+. As for house prices in Flanders, the calculation of Vermeulen et al. (2016:110, 114) marks almost half of the territory with a real risk of shrinkage.

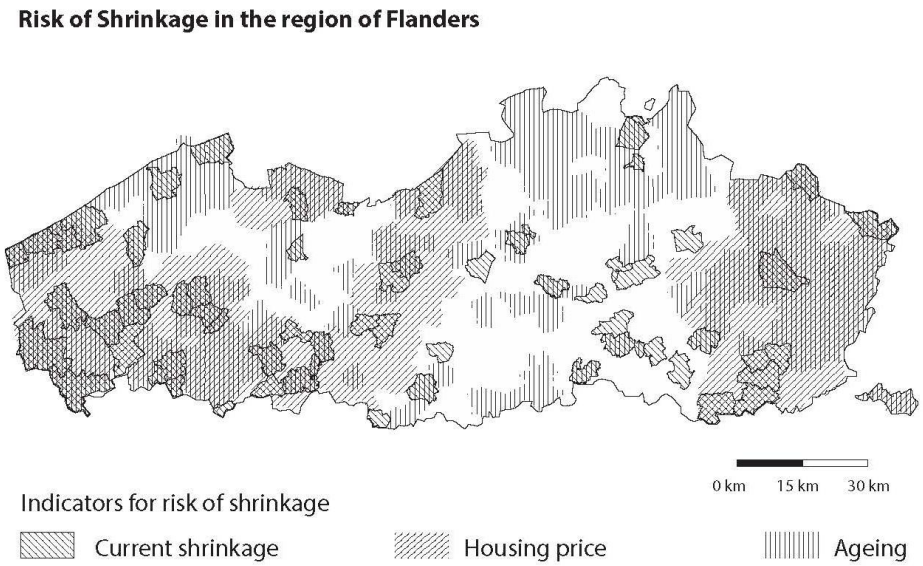


Fig 4. Risk of shrinkage: current demographic shrinkage 2005-2015 (Statistiek Vlaanderen, 2015), risk of shrinkage related to ageing on the long term (Schockaert et al., 2016:16) and lower house prices compared to the nation-wide average (Vermeulen et al., 2016: 114).

According to these indicators, the majority of the region of Flanders has a risk of shrinkage (fig. 4). Depending on the location, there are different reasons for this risk of shrinkage. A threefold risk of shrinkage covers large parts of the territory in the east and the west. These areas at risk are predominately peripheral but not exclusively. The risk of shrinkage appears in the short term because of current shrinkage and house prices, and in the middle to long term because of ageing (Vermeulen et al., 2016, Schockaert et al., 2016).

3.3. The public debate on the spatial future of Flanders: a meaning for shrinkage?

At the end of 2016, the White Paper of the Spatial Policy Plan for Flanders introduced a series of principles for the region. In its English brochure, the Flemish Government explicitly states: "*In 2040 we will cease taking up any more open space for building new houses, offices and facilities. Additional appropriation of space will fall to 0 hectares per day. Instead, we will make better use of well-situated places in our cities and villages. The new basic principle? Doing more with less space. Fortunately, there are plenty of opportunities waiting to be seized.*" (Departement Ruimte Vlaanderen, 2017). In the public discussion that followed, various opinions were expressed by different stakeholders, which we analyzed about how this related to the issue of demographic shrinkage. In other words, we tried to map the different meanings of demographic shrinkage in this context (see table 1).

Table 1

Collected opinions on the spatial future of Flanders

	Who	# opinions	Opinion on the plan for the spatial future of the region	The existence of shrinkage = a positive influence (+) / a negative influence (-) / neutral (/)
1.	Minister of Environment, Agriculture and Nature	5 opinions from articles	Initiator of the Spatial Policy framework addressing strategic places for demographic growth and advocating stronger open space networks Tools: transfer of development rights	Neutral to positive: No explicit mention of shrinkage. Stronger open space networks might benefit from a condition of shrinkage when demographic decline results in the possibility to tear down badly located buildings and a lower user intensity.
2.	Planning experts	5 articles 4 interviews	A concrete stop cannot happen fast enough, but it should be with a focus	Neutral: shrinkage deserves action to overcome the negative aspects.

		+ informal interviews	on inclusive higher densities.	
3.	Architects and urban designers	5 articles	Plea for higher densities in strategic places and creating more 'people-free' spaces, advocating mobility of people towards places with higher densities (by Government Architect, 2016) Advocating higher quality of the built patrimony (Independent architect) Tools: higher taxes on housing in more peripheral locations	Positive: Shrinkage – or the internal movement of people towards denser cores – as a necessity for a more sustainable urban structure / more space for biodiversity Shrinkage as a phenomenon that leads to vacancy – allows you to tear down low-quality buildings. Strategic shrinkage could reduce the cost for infrastructure (roads, electricity, water, gas) Shrinkage might be mainly an exodus of the lower incomes from the more peripheral locations?
4.	Inhabitant of the 'countryside'	5 articles 12 interviews	Addressing the qualities of low-density housing environments: quietness, presence of nature, proximity to places with biodiversity and for food production, air quality, availability of space.	Neutral: Shrinkage – or lower population densities - reinforces qualities such as quietness, presence of nature.
5.	Mayors from mid-size cities	4 opinions from articles	One stresses the need for appropriate tools, another one stresses that they are already limiting building rights.	Depends: necessity for right tools. The city that already limits building rights has faced shrinkage in their inner city in recent years, limiting the process of suburbanization benefits their center.
6.	Mayors and policy makers from two peripheral regions	6 articles + Informal interviews	They share a fear for a vicious circle regarding urban decline with limited external migration.	Negative: Shrinkage = negative aspects of population decline

7.	Owners of badly located unbuilt land	2 articles	We will build while we still can.	Neutral: Shrinkage is something that you can overcome by constructing more
8.	Nature and water management experts	4 articles + Informal interviews	Tear down badly located buildings.	Positive: Shrinkage reduces problems of the physical environment

The existence of shrinkage relates in a positive, negative or neutral way to the opinions on the regional future. The first meaning for shrinkage arrives closest at problematizing urban, not just demographic decline (Haase et al., 2013). The six mayors from the more peripheral regions (opinion 6) fear that their lack of strategic places for demographic growth will trigger aspects of urban decline. These aspects include economic decline and settlement system change as a result of a decrease in population densities. These municipalities, and their region in general, already face an ageing population, as well as a widespread, though small, population decline in many places. With a global tendency for population growth to occur in cities and less in places with lower population densities, these mayors witness a decrease in livability for their municipalities. They fear negative side-effects of a spatial policy plan if the plan were to reinforce migration towards more densely populated and more central areas. The informal interviews from another peripheral province support that this concern is not unique to this region but is also an issue in other places with low densities. Moreover, the four questioned planning experts acknowledge they could imagine demographic shrinkage as a growing concern for some places (opinion 2).

Second, while shrinkage is explained as a problem for livability in more peripheral regions, many voices praise the qualities of the living environment that are reinforced in a scenario of shrinkage (opinion 4). The opinions from inhabitants of peripheral places, in the public press and from the interviews, address the livability in terms of space, quietness, air quality or proximity to

nature. These arguments contrast with those of inhabitants of places with a high population density. They praise the proximity of urban functions such as services, culture, work opportunities, and the sustainable model to accommodate growth. The interviews support the differing viewpoints and the attractivity of different qualities. Some of the inhabitants of more peripheral places moved away from family members to denser, more centralized places. Those that stayed mostly benefit from the space that was opened up. As long as maintenance and mobility are no issue, the free space is used for various purposes, from storage to a sauna or hobby room, to a bed and breakfast as an extra source of income.

Another interpretation of shrinkage is one of strategic shrinkage in the function of growth. Some experts, like the Flemish Government Architect (opinion 3), plead for an active migration towards cities to optimize the spatial efficiency in planning through more cost-effective infrastructure, less traffic congestion, the creation of more space for water and biodiversity and meeting the responsibilities for the global climate agreement. A migration towards more densely populated areas could be a way to gain spatial quality in the places that are left behind. This could be the case if the region of Flanders invests in a reconversion of low-quality buildings in favor of models with higher densities, or in the ‘defragmentation’ of open space, as the Government Architect calls it. This opinion is shared by other designers (opinion 3) and is especially supported by experts working in nature and water management (opinion 8). The opportunity for demolition, however, only occurs when demographic shrinkage also involves a decline in households. A decline in households, which results in vacancy, can enable the removal of poorly located buildings (for example in flood-prone zones), or return the land to non-human uses. In this way, biodiversity can be reinforced, or food production expanded. This opinion is nuanced, however, by some mayors of larger cities and opinions from sociology and spatial

planning (opinion 2). These changes in population densities and a more resilient spatial configuration, need on the one hand extra investment in more livable cities and social policy to retain inhabitants in denser centers, and on the other hand, support for the areas where population densities are declining.

Lastly, demographic shrinkage is understood as something that one can overcome. Many opinions in the debate point out that the transformation towards the goal of this resilient urban structure needs the right policy and planning instruments. In their opinions, some people intend to refine the plan. They propose tools or share their experiences of how they are already evolving in the 'right' direction, such as experimenting with a transfer of development rights. For instance, a midsize city mayor from the west of the region states that their municipality has already started cancelling building rights on its outskirts. This cancellation is a measure to attract more people to the city center (opinion 5). However, installing the right instruments takes time. This time in-between can also be used to increase construction while it is still permitted (opinion 7). This opinion is mostly expressed by building promotors or individual homeowners. In this perspective, construction is seen as the only way to avoid a loss of property value.

The opinions on the future of the region show an underlying need to include the concept of demographic shrinkage in spatial policy and planning, both for its benefits as to overcome possible negative aspects. Demographic shrinkage can have different interpretations. It is a growing concern for local policy levels, yet, it also has advantages. Fewer inhabitants could increase some of the qualities of living environments addressed by many of the collected opinions, and extra space could stimulate the imagination and reorganization of some individuals. Including strategic demographic shrinkage in the function of a more sustainable growth and a spatial reorganization, however, still requires vision and practical support. The

opinions underline the fact that the practice of anticipating on a possible decline in the population remains a rather vague terrain.

3.4. Main findings

We explored three lenses to investigate the concept of shrinkage within Flanders: through demographic data, through indicators for the risk of shrinkage and through opinions on the future of our case region. Before continuing the discussion, the table below summarizes the main findings.

Table 2

A summary of the main findings as revealed through the three lenses:

	Lens	Main findings
1	Current demographic data	Shrinkage is present in demographic statistics: - as a regionwide declining workforce (age 18-65) and, on the long term, as a regionwide natural decline because of an ageing population and a low birth rate. - on more local scales shrinkage becomes more widespread and clustered. Mostly it is net demographic shrinkage, not of households. Sometimes it is also a shrinkage of households.
2	Risk of shrinkage	Shrinkage: - can appear in the future in the majority of the territory on the short, medium and/or long term. - has the highest risk in the peripheral territories, but the risk covers also more central territories.
3	Opinions on the future spatial transformation of the region	Shrinkage, in our case, has multiple meanings. It is a negative influence: - when it threatens the number of services, public transport, affordability of infrastructure. - when the awareness for the risk of shrinkage results in increased construction in places that do not contribute to a more resilient urban structure. It is a positive influence: - that enhances certain qualities of living environments, such as quietness or the presence of nature. Strategic shrinkage is an enrichment for sustainable growth: - to meet the goals for more sustainable urbanization. - to tear down badly located, low quality and expensive built space.

	- to reconstruct open space, for example in flood-prone zones, for food production, recreation or biodiversity.

4. Discussion

The present study reveals that even though shrinkage seems to be absent at most levels of policy and planning, demographic shrinkage within this region exists and it has the potential to become more important in the future. In other words, it could be meaningful for the spatial practice of the region. This knowledge strengthens the view that demographic shrinkage is a concept that, even in a growing region, should receive attention from disciplines involved in a spatial practice.

4.1. Different kinds of shrinkage

The region of Flanders has a specific sort of shrinkage, which distinguishes itself from what is understood as a shrinking city (Haase et al., 2013, Oswalt & Rienets, 2006) or a shrinking region (Rijksoverheid Nederland, 2018). Here, the criterion of demographic decline of 10% of inhabitants, or more than 1% annually, which shrinking cities and shrinking regions share (Oswalt & Rienets, 2006:156, Rijksoverheid Nederland, 2018), is only applicable at the level of sub-municipalities instead of entire cities or regions. Thus, negative aspects of shrinkage will not affect the region, but the sub-municipalities, and most likely neighborhoods. Therefore, this concept of demographic shrinkage in growth relates more to the urban theories on the livability of neighborhoods rather than the regional spatial planning discourse that is common in shrinking cities and regions.

However, the risk of shrinkage included in this study does reveal a scale, at least in the more peripheral territories, that is similar to those of shrinking regions (Rijksoverheid Nederland, 2018). In the Netherlands, this regional risk of shrinkage is included in the national policy

program that addresses population decline for the so-called ‘anticipation regions’. These are regions with a smaller population decline of 4% by 2040, but they can benefit from similar approaches as the shrinking regions (Rijksoverheid Nederland, 2018). By including them in this program, it is possible to anticipate the negative aspects of population decline before shrinkage becomes problematic. This study, where it concerns the opinions of the more peripheral territories, supports that even in the absence of significant shrinkage on the larger scale levels, there can be larger territories that require a planning that is different than the standard practices of growth. For this larger context, introducing the concept of demographic shrinkage adds a speculative aspect to its spatial practice. In places with a risk of shrinkage, it is more likely for the phenomenon to appear, but it remains unclear about the specific when and where. Including this uncertainty is the main challenge for a planning and a policy for growth.

On the positive side, the scale on which demographic shrinkage will or will not appear, does not necessarily affect the effectiveness of including demographic shrinkage in a context of growth. The effects of land-use change from built space to open space, for instance on the value of biodiversity, can already be significant with the reconversion of small parcels of land (Frazier & Bagchi-Sen, 2015). For shrinking cities and regions, the focus on open space has been a solution out of necessity to restructure large territories, and a means to integrate a large complexity of societal challenges in strategic spatial plans (Notten, 2017, Frazier & Bagchi-Sen, 2015, Detroit Future City, 2012, Oswalt, 2005). The concept of shrinkage in growth will be much less structural for strategic plans than in a context of overall shrinkage. The impact of including shrinkage in growth and the benefits for the value of open space will much more depend on a strategy that allows actions to take place on a small scale, for small parcels of land when the opportunity arises.

4.2. Using the opportunities of shrinkage in growth?

Together with research on shrinking cities and regions, this study links demographic shrinkage and its demolition potential to a change in land use in favor of open space functions. One of the first concerns when linking demographic shrinkage to demolition of the built space is the costs of demolition. In shrinking cities, for instance, in the US, the purchasing costs for land are low due to tax foreclosures and public auctions (Frazier & Bagchi-Sen, 2015). Converting properties from private to more common purposes becomes more affordable in this case. In our case, the difference between property prices in places with a high risk of shrinkage and the national average is rather small compared to property prices in shrinking cities or regions. Yet, a condition of shrinkage and growth has an advantage that shrinking cities, i.e., where the whole system is shrinking, do not necessarily have. The additional growth in one place could be linked in a monetary way to shrinkage in another place, for example, through ecosystem services (Haase et al., 2014). And eventually, if monetized, can create a budget for demolition. In the case of ecosystem services, this requires adapted methods for the analysis of the ecosystem service potential. Not only will these methods have to include the value of, among others, biodiversity, water storage, food production or recreation, of the existing open space, but also of the currently built space (Frazier & Bagchi-Sen, 2015).

However, to identify the opportunities of demographic shrinkage, as opposed to the risks, different data should be consulted than those used in this study. Further research should go into creating a more refined understanding of shrinkage and the risk of shrinkage and its impact on spatial practice. The more specific and more local the demographic data and the data consulted to indicate the risk of shrinkage, the better the impact and possible scale of negative consequences of demographic shrinkage can be revealed. To also trace the opportunities, precise data starting

from the level of parcels, such as vacancy, costs for demolition and potential value for ecosystem services should be added. Developing a more refined analysis should make it possible to differentiate the responses to shrinkage and the risk of shrinkage in growth.

4.3. A systemic relation of shrinkage and growth

Another aspect that merits further study is related to understanding the link between shrinkage and growth.

In this study, the shrinkage that becomes meaningful for a spatial practice in growth and the overall demographic growth appear on different scale levels. The relationship between different scales in the process of population losses has not often been the subject in the discourse of shrinking cities (Bernt, 2016). For demographic shrinkage, generally accepted is the oversimplification of "*crisis = outmigration = population loss = vacancies, impoverishment, fiscal stress… = shrinkage*" (Bernt, 2016). By connecting shrinkage on the more local levels and growth on larger planning and policy levels, more diverse meanings for shrinkage are found in this study.

Yet, in practice, when looking into policy responses in our case, an awareness of the risk of shrinkage leads to only one response, and only on the local level, namely avoiding shrinkage by constructing more housing and attracting more inhabitants (Schockaert et al., 2016). At its base, there is the same oversimplification that population loss equals crisis and impoverishment. But it is unsure that constructing more housing eventually avoids shrinkage. The demand for housing and the demography of a place do not always follow the housing availability (Vermeulen et al., 2016). And constructing more does not necessarily add to the qualities of an environment.

The link between shrinkage and growth should receive a systemic approach. Theoretically, one could plan for and with demographic data. Especially for a region in which growth is mainly

derived from external migration, as is the case in Flanders, it would become possible to manage population growth together with the decline (Davoudi et al., 2010). In reality, even with place marketing, it is not always possible to sufficiently influence and manage these settlement patterns towards the desired outcome (Hospers, 2011). What this study has identified, one could argue, is a version of the center-periphery phenomenon that has been widely reported and examined over the past 50 years (Friedmann, 1967 and onwards, consulted Darwent, 1969). More specifically, a version that needs advancement from the perspective of the periphery, rather than from the center. Nowadays, the risks and disbenefits of shrinkage are most likely to be associated with areas that already have lower levels of social and cultural capital, while the benefits are more important for the region as a whole. Further study could focus on describing the effects of migration patterns, housing prices or available services on values in terms of space, quietness, air quality or proximity to nature that are attributed to more peripheral places, from the perspective the periphery.

Developing a systemic understanding of shrinkage and the periphery in relation to growth could help the implementation of the concept of shrinkage for policy and planning in growth.

5. Conclusion

This study concludes that our case of a growing region has a specific sort of demographic shrinkage that distinguishes itself from that of shrinking cities or regions. Demographic shrinkage is small according to the available statistics. However, the phenomenon could be much more widespread than statistics on a municipal level suggest. It is clustered on a smaller scale, such as that of sub-municipalities or neighborhoods. In a case where growth is mainly derived from external migration and the population is ageing, demographic shrinkage can be of use to

spatial practice in the short, middle and long term. Indicators for the risk of shrinkage can reveal a much different image of places where shrinkage could be a future scenario.

Demographic shrinkage in growth comes with its specific opportunities precisely because it can be linked to growth. Occasional demographic shrinkage can be an advantage to the demand for more open space, for instance. And when the risk of shrinkage is high on a regional scale, also overcoming the negative aspects of population decline adds to the complexity. The existence of different densities creates diversity in living environments with different qualities. Shrinkage could reinforce qualities such as quietness or the availability of nature. Strategic shrinkage can also be advantageous to growth. Creating possibilities to tear down badly located and low-quality built space, or to reconstruct open space, for example in flood-prone zones, for food production, recreation or biodiversity.

The concept of shrinkage in growth requires an understanding of the systemic relations on different scale levels and an integrated approach for transformation. Even without explicit spatial planning or policy on demographic or urban shrinkage, a spatial practice focussed on growth could benefit from a better understanding of the indicators of demographic change and further development of the indicators of the risk of shrinkage. Indicators for the risk of shrinkage should be able to point out the opportunities and strategic value for demolition, as well as indicate the negative impact of future population decline. Shrinkage in growth provides the opportunity for planning to involve the benefits of demographic shrinkage in a context of demographic growth before it becomes problematic and causes urban decline. The main question that remains is how to effectively introduce these results into the policy debate and in spatial practice.

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