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Allotment gardens: psychosocial benefits and conflictual community aspects

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Abstract: In a context of re-greening of urban spaces, it is crucial to examine the impact of green spaces on the population. In this qualitative study carried out in France (Nantes), 28 people with a plot in an allotment garden were questioned through semi-directive interviews about the psychosocial impact of this type of space. Using thematic and lexicometric analyses, the different psychosocial benefits of these spaces are highlighted and put into perspective with the conflicts occurring there. The content analysis foregrounded the benefits of allotment garden regarding psychological well-being, (notably through the feeling of flow), physical health, self-development and social bonding. Nevertheless, these benefits are balanced by the different conflicts reported by the participants. By showing that positive and negative social aspects are significantly associated in the participants' discourse, the lexicometric analysis strengthened the idea that these elements must be considered jointly to better describe the reality of allotment gardens.

Key words: allotment garden, quality of life, social relationships, social conflicts, flow, thematic analysis, lexicometric analysis

1. INTRODUCTION

In a context of increasing climate and health crises (Carlson et al., 2022; IPCC, 2021, 2022), cities and governments have to strengthen the adaptation and the resilience of our living spaces to these changes. From this perspective, natural urban spaces are particularly interesting insofar as they could contribute to the adaptability of environments to natural disasters, water and air quality, and the economic and social development of towns and cities (Cohen-Shacham et al., 2016). These green spaces also represent a health opportunity as they contribute to well-being, social ties and health. Nature in the city can take different forms, including allotment gardens, a category that seems particularly relevant to focus on.

Contact with nature and quality of life

The scientific studies conducted in the field of social, environmental and health psychology have led to a better understanding of how natural spaces contribute to our health and well-being. In its integrative conception, quality of life refers to the physical and psychological condition of an individual and how this brings them satisfaction in regard to their expectations and the context in which they evolve (Fleury-Bahi et al., 2017). Quality of life is generally considered through four fundamental components (World Health Organization, 1998): the physical condition, characterized by the individual's somatic health and functional capacities; the psychological component related to well-being, emotions and affective states; the quality of social relations and social activities; and finally the individual's material and environmental condition related to the individual's relationship with their environment.

From this perspective, natural spaces have several characteristics that can contribute to a better psychological quality of life. Nature-related well-being can be considered in both hedonic and eudemonic perspectives (Olivos & Clayton, 2017). Hedonic well-being refers to a feeling of pleasure, a positive emotion experienced at a specific moment (Diener, 2009), in this case linked to contact with a natural space. Studies have highlighted two processes prompted by contact with nature: the stress recovery process (Ulrich et al., 1991) and attentional restoration (Kaplan, 1995). The first process assumes that specific characteristics of natural places generate positive emotions and reduce internal tensions. The second one complements it by suggesting that the characteristics of natural spaces are propitious for a relaxation of focused attention and thus for cognitive restoration.

Eudemonic well-being refers to happiness associated with the development of the self and identity as well as a sense of purpose and meaning in life (Ryff & Singer, 2008; Waterman, 2008). In terms of identity, contact with nature stimulates environmental identity or connectedness to nature, which refers to the place that the natural environment occupies in the

individual's self-concept (Clayton, 2003). In a meta-analysis published in 2014, Capaldi et al. suggest that connectedness to nature has a weak but consistent relationship with life satisfaction, positive affect and feelings of vitality. Several works also show that connectedness to nature is related to greater psychological resilience (Ingulli & Lindbloom, 2013) and increased personal development (Nisbet et al., 2011). Olivos and Clayton (2017) consider that regular contact with natural spaces can lead to a search for self-expansion, a desire to cultivate a broader identity and to learn more about oneself and one's "place in the world".

Since gardening is an activity that permits contact with nature, the studies on gardening also highlights its health benefits. Thus, the scientific literature has identified the benefits of gardening on physical health (Draper & Freedman, 2010; Kirby et al., 2021), life satisfaction (Soga et al., 2017; Sommerfeld et al., 2010; Waliczek et al., 2005; Wang et al., 2014), stress reduction (Genter et al., 2015; Kirby et al., 2021; Koay & Dillon, 2020; Van Den Berg & Custers, 2011), attentional restoration (Gonzalez et al., 2010; Kim et al., 2012), or spirituality and connectedness to nature (Bernardini & Irvine, 2007; Genter et al., 2015; Kiesling & Manning, 2010; Mumaw et al., 2017; Webber et al., 2015). It is also, according to the meta-analysis by Kirby et al. (2021), about having the opportunity to learn new things and build skills while doing a fun and money-saving activity.

Allotment gardens: benefits and social perspective

Nevertheless, allotment gardens are, unlike home gardening, collective spaces whose specific social reality needs to be studied. Allotment gardens are one of the forms of non-commercial urban agriculture, more specifically among the forms of collective gardens. As defined by French law (n°52-895 of 26 July 1952), allotment gardens are spaces consisting of a certain number of plots of land allocated for a given or unspecified period of time to households who cultivate them at their convenience.

Compared to individual gardening, these spaces are distinguished by their social dimension: it is a place where people interact with others and meet people. Hence, many studies have highlighted the propensity of allotment gardens to meet the social needs of individuals: it permits them to have better social relationships, to intensify the sense of belonging to a community and to participate in social, cultural and generational mixing (Diamant & Waterhouse, 2010; Dobson et al., 2021; Draper & Freedman, 2010; Genter et al., 2015; Kingsley et al., 2019, 2020; Kirby et al., 2021; Koay & Dillon, 2020; Lanier et al., 2015; Nordh et al., 2016; Soga et al., 2017; Torres et al., 2017b; Van Den Berg & Custers, 2011). The garden is also a place of expression where individuals can value their social identity, their culture and their practices (Clayton, 2007; Draper & Freedman, 2010; Freeman et al., 2012; Mazumdar &

Mazumdar, 2012). As summarized by Duchemin et al. (2008), the allotment garden is a powerful social development tool for a territory, as it contributes to greater inclusion, cohesion and social linkage.

However, the communal dimension of these spaces also implies the existence of conflicts and negative social events that can undermine the benefits described earlier. At present, there is very little work in the scientific literature describing social tensions in gardens and the studies (Alaimo et al., 2016; Delshammar et al., 2016; Yap, 2019) are more focused on how these conflicts are resolved rather than on the issues that lead to such disputes.

2. OBJECTIVES

This study is part of a larger European research project which aims to work with the inhabitants of several European cities to implement natural spaces that bring a better quality of life, more sustainable economic development and reinforced social cohesion. The aim of this study was to synthesize the contribution of gardens to quality of life but also to bring some nuance to the very idyllic image of allotment gardens that can be found in the literature. Thus, the objective of this survey is to identify the psychosocial benefits linked to allotment gardens while putting them in perspective with the overall collective processes that also occur in these spaces. Indeed, most of the aforementioned studies on allotments present mainly positive social processes, whereas it appears crucial to assess the benefits in the light of the negative social processes in order to have a more global and precise vision of the reality of allotments.

3. METHOD

Participants

The data collection took place in two allotment gardens located in the French city of Nantes (318,000 inhabitants). The garden “Les Eglantiers” is one of the oldest in the town, with its creation dating back to 1981. Since the garden was inaugurated, it has been considerably transformed: the interior of the garden has been pedestrianized, and a car park has been installed, as well as collective plots, a toilet, a sheep pen and a chicken coop. There was also a major rehabilitation project between 2012 and 2015 after the discovery of pollutants in the soil (see Jean-Soro et al., 2015, for more information). The site is adjacent to a residential area on its south and west side and has 95 plots. The garden “Angle Chaillou” was opened in 1999. It has 58 plots as well as an orchard, a convivial common area (chalet, tool shed, petanque court), a collective medicinal garden and an apiculture area; it has experienced no episodes of soil pollution. Like most allotment gardens in France, the land is owned by the city but is managed

by the garden associations. For each site, gardeners are members of the association and a voluntary board is elected at general meetings.

The study sample is composed of 28 participants encountered in 24 interviews. This sample size is relevant in view of the various studies (Creswell, 2007; Griffin & Hauser, 1993) which emphasize that 20 to 30 interviews are sufficient to capture over 90% of the information sought. We also relied on the principle of semantic saturation described by Glaser and Strauss (1967): the optimal sample size is reached when the data collection phases do not provide any new information. The 28 participants are gardeners from one of the two gardens: 15 people were interviewed at Les Eglantiers and 13 people at Angle Chaillou. Particular attention was paid to diversifying the sample in terms of gender, age and socio-economic status. The sample is composed of 16 women and 12 men with an average age of 62.6 years (range 32 to 84 years), with 14 of them retired. Gardeners have been using their plot for an average of 12.9 years and 12 of them are or have been members of the voluntary board. The samples of the two gardens are very alike according to these different indicators (see Appendix 1).

Procedure and interview guide

The data was collected through semi-structured interviews conducted by one of the researchers in June 2021. All interviews were conducted in the gardens, often by spontaneously going to the gardeners in their plots and asking them if they would like to contribute to the survey. The interviews had an average duration of 32 minutes. All participants were asked for their consent at the beginning of the interview. All data were aggregated after collection in order to guarantee confidentiality. The authors complied with APA ethical standards (<https://www.apa.org/ethics/code>), in accordance with the ethics guidelines of the European program of which this study is a part and of the partner laboratories. Participation in the research was voluntary and informed consent was obtained from each participant.

The interview guide designed for the study included questions related to the psychosocial aspects of gardening. Participants were firstly asked about their motivations for taking up a plot or about the benefits of the experience, using general questions (“What do you get out of coming to the garden”). They were also asked about their relationship with the collective, their interactions with other gardeners and any conflicts they had experienced. Finally, they were asked about their perception of what an allotment garden brings to the neighbourhood and how it could be improved (see Appendix 2 for details).

Data analysis

In order to provide the most complete analysis, two different methods were used. As all the interviews were conducted in French, the analyses were carried out on a French language corpus.

Content analysis

A categorical content analysis was performed on the corpus (Berelson, 1952): this consists of grouping semantically-related elements. It thus focuses on the content of the participant's discourse rather than on its form, enunciation or structure (Quivy & Campenhoudt, 2005). The analysis of the interviews first takes the form of a vertical reading (from beginning to end) of the entire corpus, which makes it possible to identify the relevant content and the main themes. In the second stage, the content of the interviews is divided into units of meaning that are classified into the different themes that finally make up the different categories of the analysis. The content analysis was performed by a single author, without the possibility of performing a cross-judge analysis.

Lexicometric analysis

In the second stage, the data collected was examined by lexicometric analysis. As Lebart and Salem (1994) write, lexicometry aims to identify the degree of similarity between text segments according to the vocabulary and frequency of forms (i.e. words) used: "What are the forms that characterize each text, by their presence or absence?" (p.135). The lexicometric analysis follows several steps: first, the whole textual corpus is lemmatised (each word is reduced to its root) and then separated into text segments (according to a defined number of words or according to punctuation) on which statistical analyses will be performed. The analysis carried out here is a hierarchical top-down clustering, a method derived from the work of Reinert (1983; cited by Ratinaud & Pélissier, 2017) and carried out using the software IRaMuteQ 0.7 (Ratinaud, 2014). Hierarchical top-down clustering is a process that clusters the most correlated segments to form thematic classes. The software divides the data into classes that are distinct from each other and homogeneous within themselves. Each class is represented by a series of words that helps the researcher to conceptually interpret what each class refers to (Roy & Garon, 2013). Every word is provided with a χ^2 score and a p-value which indicate the intensity of its association with the class. To facilitate interpretation, the software also allows the extraction of verbatims that characterize the different classes.

4. RESULTS

Thematic analysis

The content analysis carried out on the content related to the benefits of allotment gardens revealed four main dimensions, each divided into several sub-themes.

The activity itself

The first major theme refers to the benefits resulting specifically from the gardening activity, which are not necessarily identified in other urban green spaces. Thus, 16 participants mention the interest and intrinsic pleasure linked to the activity, particularly with regard to the importance of the sensory aspect and contact with the soil (*“And then to work the soil, it’s... It’s really a virtuous thing, to see things growing and everything...it’s very exciting”*). The desire to have products that are considered to be of good quality and whose production conditions are known is also an important aspect of gardening, according to 14 gardeners. Finally, a small group of participants (7) also mentioned the essential supporting role of the garden in the food budget, i.e. the need to make savings on shopping.

Health and well-being

In 21 out of the 24 interviews, the benefits of the activity and its role in quality of life and health have been identified. The matter of the benefits for psychological well-being is clearly mentioned: *“The garden is good for people who live in apartment buildings. It takes your mind off things...For those who like to garden too...[...] And here we’re in a place where it’s quiet...”* Some gardeners go further into these aspects. Ten of them see gardening as therapeutic, as a way of freeing themselves from an emotional burden or to fight loneliness: *“I realized that there is a therapeutic side to gardening... At some times in my life, I wasn’t doing too well.... At those times, it was utterly obvious to go gardening...I felt better”*. Regarding the attentional aspect, in six interviews the analysis highlights discourses that evoke the notion of flow (Csikszentmihalyi, 1990), i.e. a state of intense concentration where our attentional resources are entirely mobilized in an activity that we are passionate about (*“We think about nothing, we think about what we’re doing. It’s one of the only moments when my mind doesn’t wander because I’m concentrated on what I’m doing [. ...] That’s how I stay focused without thinking about unpleasant things, as long as I’m here I enjoy it.”*)

Finally, nine gardeners highlight that gardening is good for physical quality of life: it is an opportunity for them to keep fit and take care of their health (*“You do quite a lot of exercise here! You know, doing everything here is exercise so when you go back home, it’s... you feel good, calm.”*)

Self-development

Identified in 14 out of the 24 interviews, this dimension refers to the idea that gardening is an opportunity for personal development. Thus, half of the gardeners emphasize that the experience of gardening is made up of regular discoveries and learning; of a feeling of gaining skills that grows with the years. (*"It makes us read - there are magazines on gardening - to see a little bit how to do this, to see why I failed that [...] Well, there's always something to learn, to see."*) In a complementary manner, ten gardeners also mention the feeling of personal accomplishment that managing a plot brings and the pleasure of committing to a long-term project.

The positive social aspects of gardens

Since the specificity of allotment gardens is the collective aspect of these spaces, the positive social dimension of the gardens is also a component that was widely discussed in our interviews. We identified several social practices that contribute to establishing social links and conviviality in the gardens.

The first practice refers to exchanges between peers (lending tools, giving plants, offering help). Found in 20 out of the 24 interviews, this practice is indeed a social norm in the gardens. There are also many social interactions around the growing practices: *"We all have something in common - even if we don't necessarily have any particular affinities or connections, we are all able to talk about plants"*. Moreover, some of the participants emphasized that the richness of these discussions about practices also stems from cultural differences: *"They [people who are non-European in origin] don't cultivate the same vegetables as we do, and they have a different way of approaching things [...] It's good that they give us their knowledge, and we give them ours."*

There are also social practices that are not directly related to gardening. Thus, 15 participants expressed their joy at being able to develop friendships and to experience moments of conviviality (*"I have friends who also garden, so as soon as we've finished gardening at around midday, we stay together... We have a chat and a drink and there you have it, that's also one of life's good moments"*). Eight other participants also mentioned that the garden is a place that offers the opportunity to share a special moment with friends and family.

This overview highlights the diversity of the benefits of an allotment garden. Yet even as the garden is a place of relaxation and social bonding, it is also a dynamic social space where not everyone approaches gardening in the same way. Consequently, these beneficial social processes must also be discussed in relation to the aspects that cause frictions.

Community life and conflicts

The content analysis highlights various topics of conflict and tension in the gardens which contribute to nuancing the discourse on social benefits. These elements are mentioned in 14 of the 24 interviews.

Firstly, interpersonal conflicts concerning the practices are identified. These include interpersonal conflicts over the amount of water needed to grow crops (13 interviews); opinions differed on what the best practices are: *“I reacted specifically about water consumption [...] I politely explained to them that there are methods to use and that there’s no point in watering like that”*. Secondly, there are quarrels between gardeners for whom sharing a space is difficult at times: *“Sometimes it’s because there’s a branch sticking out of the other’s [neighbour] garden and it’s in the way and they don’t say so right away. And then they grumble in their corner and then suddenly it all blows up and you don’t know why”*.

The second aspect of social tensions in the gardens concerns the relationship between the gardeners and the members of the association’s voluntary board. Among the rules that create tension in the gardens, the prohibition on watering with a hose or the restriction of access to water at specific times was mentioned nine times: *“They ration it so that the tap is only open at 5 pm and we have to water with a watering can, we’re not allowed to water with a hose [...] So for those who work... we can’t always be there at 5 pm....”* The participants elected to the association’s board also mentioned the tensions related to gardeners who disrespect the rules. These participants emphasize in particular that they want to ensure that the hedges and sheds comply with the regulations so that the space remains a public place: *“Anyone who walks here in the alleys must be able to see what is behind the hedges, which is why closed shed extensions are forbidden, but I still have some in the garden [...] I’m going to do battle”*. Mirroring these speeches are those of seven gardeners who are critical of the voluntary board: *“I received a letter telling me that I was using a plot in another garden [...] and that shocked me... firstly it wasn’t true, secondly maybe they could have come to me [...] So it made me really angry”*.

The different results of the thematic analysis thus allow for a better understanding of the benefits of allotment gardens for the individuals involved, especially with regard to the social aspects. However, analysis of the elements causing social tensions moderates these results and leads to a more detailed description of the social reality of allotment gardens.

Lexicometric analysis

In order to complement the elements provided by the thematic analysis, a lexicometric analysis was conducted on the corpus. The software recognizes 24 texts (corresponding to the 24 interviews), divided into 1,565 segments, which contain 2,834 different forms and a total of 55,761 occurrences. The top-down hierarchical clustering carried out shows that the participants' discourse on the psychosocial aspects of allotment gardens is structured in three main classes. 1,494 of the 1,565 text segments (96.57%) were integrated into one of the three classes identified in the analysis (Figure 1).

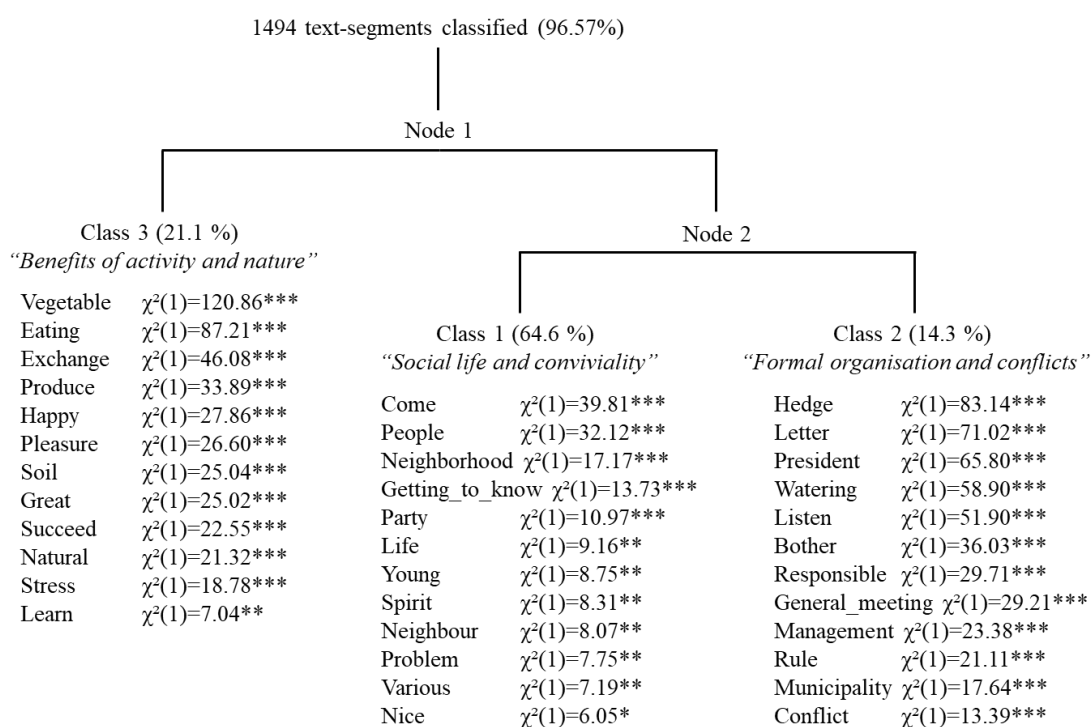
The first class, to which 64.6% of the text segments are attached, was named "Social life and conviviality". Indeed, this class is characterized by words such as "People" ($\chi^2(1)=32.12$, $p<.001$), "Neighbourhood" ($\chi^2(1)=17.17$, $p<.001$), "Getting_to_know" ($\chi^2(1)=13.73$, $p<.001$) or "Party" ($\chi^2(1)=10.97$, $p<.001$). These different elements lead us to consider that this class clearly refers to the positive and pleasant social aspects of community life in the gardens, which is supported by one of the characteristic segments of this class: *"We're all in the same relational mindset, you know. And also, I think that people come here to relax and to be laidback, so I think people are in a good frame of mind and that's really nice."*

The second class, accounting for 14.3% of the segments, is called "Formal organization and conflicts". Considering the characterizing words, it refers to the more formal aspects of life in the gardens: the organization of the voluntary board of the association that manages the garden, the regulations that govern the uses and practices in the garden and the resulting conflicts that may occur. Indeed, there are characteristic elements related to the regulation of practices such as "Hedge" (in relation to hedge height and the public aspect of the place, as mentioned earlier) ($\chi^2(1)=83.14$, $p<.001$) or "Watering" ($\chi^2(1)=58.90$, $p<.001$). There is also all the vocabulary linked to supervisory functions: "President" ($\chi^2(1)=65.80$, $p<.001$), "Responsible" ($\chi^2(1)=29.71$, $p<.001$), or "Management" ($\chi^2(1)=23.38$, $p<.001$). Finally, elements that refer directly to social tensions in the gardens are also found, such as "Letter" ($\chi^2(1)=71.02$, $p<.001$), "Bother" ($\chi^2(1)=36.03$, $p<.001$) or "Conflict" ($\chi^2(1)=13.39$, $p<.001$).

Finally, the analysis highlights a third class representing 21.1% of the segments and which has been named "Benefits of activity and nature". The most characteristic text segments in this class include this, for example: *"I wanted to have a garden so that I could at least have my vegetables, and then the pleasure of cultivating the land, the pleasure of cultivating the land, I like it...I work without gloves, it's not good, but I work without gloves so that I can feel the grass better to pull out the roots"*. Thus, various elements already identified in the thematic

analysis were found: firstly, elements linked to the activity of gardening: “Vegetables” ($\chi^2(1)=120.86$, $p<.001$), “Eating” ($\chi^2(1)=87.21$, $p<.001$) or “Soil” ($\chi^2(1)=25.04$, $p<.001$); secondly, words such as “Natural” ($\chi^2(1)=21.32$, $p<.001$) and “Stress” ($\chi^2(1)=18.78$, $p<.001$) refer to the relaxing aspect of space and to the psychological processes described earlier. Finally, the verbs “Succeed” ($\chi^2(1)=22.55$, $p<.001$) and “Learn” ($\chi^2(1)=7.04$, $p=.008$) also belong to this class, reflecting the dimension of gaining competence and self-fulfilment.

Figure 1: Top-down hierarchical classification of psychosocial aspects of allotment gardens



5. DISCUSSION

Contributions and limits of the study

Many of the elements related to the benefits identified in the thematic analysis converge with the existing literature. For example, regarding well-being, the content of the interviews clearly leads to a connection with the work on attentional restoration and stress reduction both generally (Kaplan & Kaplan, 1989; Ulrich et al., 1991) and specifically in gardening (Gonzalez et al., 2010; Kim et al., 2012; Koay & Dillon, 2020; Van Den Berg & Custers, 2011). The passion for gardening, the development of social links or the desire to save money are all benefits that have already been highlighted in most of the previous work. This is also the case

for access to good quality vegetables, the acquisition of new skills and the opportunity for physical exercise. Nevertheless, none of the studies consulted before data collection and analysis mentioned the importance of “flow” in the garden, while our analysis of certain speeches clearly highlights this state of concentration and intense enthusiasm. Only Pitt (2014) mentions the existence of flow in collective gardens, with the notion remaining very discreet in the literature related to allotment gardens. The work carried out here therefore highlights the relevance of further integrating this notion into the study of the psychology of gardening. It is also pertinent to evoke the elements that are prevalent in the literature but which we did not identify in this study’s corpus of interviews. The absence of ecology and environmental conservation is particularly noticeable: only one participant develops a discourse on these themes and the term “ecology” is used in only three interviews, whereas several works describe this as a central consideration (Kingsley et al., 2019; Kirby et al., 2021; Torres et al., 2017a). Also, no differences were identified between the two gardens either by the thematic or lexicometric analysis; despite the presence of a past soil pollution in only one of the two gardens.

This first analysis was complemented by an examination of the conflicts and quarrels that can nuance the idyllic image of relaxation and social diversity that can sometimes be conferred on allotment gardens. Although the participants emphasize that conflicts are relatively minor in their overall experience of the garden, they nevertheless mention various aspects that generate tensions, particularly regarding the differences in practices or the management choices of the voluntary board. This nuance is especially supported by the lexicometric analysis, a statistical approach which is relatively new in the study of allotment gardens. Lexicometry complements the thematic analysis by shedding more light on the organization of the discourse: the top-down hierarchical clustering shows that the positive social aspects constitute a class of their own (Class 1), while the other benefits are grouped together (Class 3). Indeed, it is also observed that the Class 1 is more closely linked to the class of conflicting elements (Class 2) than to the Class 3 (since the two social classes are derived from the same node). This shows how the social elements that contribute to the well-being of the gardeners cannot be considered independently from those that cause problems. This clarification considerably sharpens the description that can be made of the social reality of allotment gardens.

However, there are limitations to the study. The loss of standardization inherent in the semi-structured interview methodology is one of the main limitations. Since the researcher has to adapt to the participant’s vocabulary and to the dynamics of the interview, the exact wording

of the questions varies between participants. Thus, responses to questions that have been formulated in a similar but not identical way are compared and this may create a bias, especially for the lexicometric analysis. It is also considered that the sample does not provide a sufficient basis for generalizing conclusions. Indeed, one consequence of the collection procedure is that it was essentially the most regular and most committed gardeners who participated in the survey, and they do not represent the entirety of all of the gardeners' perceptions. Also, we unfortunately had only very limited access to gardeners with an immigrant background, as many of them do not speak French or do not feel comfortable enough with the language to participate in an interview.

Future research and action

In the light of the results, we can formulate some perspectives for future work. Firstly, it appears that certain themes have been partly left aside and it would be valuable to return to the gardens to study these aspects more specifically. Thus the following aspects were not explored as much as they should be: considerations related to water; to the appropriation of space and identity anchorage in the gardens; to environmental nuisances and stressors; or to the ecological commitment linked to the practice of gardening. Also, it would be relevant to give a longitudinal dimension to this study by going back to meet the gardeners in a few years' time with the same interview grid: few studies are available today on how these questions evolve over time in allotment gardens. With regard to the considerations of the project to which the study is linked, it would also be valuable to use the elements highlighted here to build a quantitative survey tool and to disseminate it to all the allotments in the Nantes-Nord neighbourhood.

Finally, it is important to underline that the diversity of the identified psychological and social benefits can be mobilized for intervention. This information supports the decision-making process insofar as it allows us to identify whether the allotment garden is a relevant contribution to a neighbourhood. On the one hand, if the problem that a decision-maker wishes to address is food security then allotment garden may not be a satisfying response. On the other hand, it will be a good solution if one seeks to create spaces that generate social life and well-being. These benefits are also arguments and levers for communicating with the population and making the allotment garden more attractive to the residents. Obtaining the support of the inhabitants appears as an essential element in the adaptation and transformation of urban spaces.

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APPENDICES

Appendix 1: Description of the sample

		Les Eglantiers N=15		Ange Chaillou N = 13		Total N = 28	
		N	%	N	%	N	%
Sex	Male	7	46.7	5	53.8	12	42.9
	Female	8	53.3	8	61.5	16	57.1
Age in years	59 or less	5	33.3	5	38.5	10	35.7
	60 or more	10	66.7	8	61.5	18	64.3
Occupational status	Active	7	46.7	7	53.8	14	50.0
	Retired	8	53.3	6	46.2	14	50.0
Residential district	Nantes-Nord	10	66.7	9	69.2	19	67.9
	Others	5	33.3	4	30.8	9	32.1
Seniority in the garden in years	9 or less	7	46.7	6	46.2	13	46.4
	10 or more	8	53.3	7	53.8	15	53.6
Association's board member	Yes (currently or previously)	7	46.7	5	38.5	12	42.9
	No	8	53.3	8	61.5	16	57.1

Appendix 2: Interview guide

Participant's information (age, occupation, area of residence, seniority in the garden):

- “Could you, in a few words, introduce yourself?”

Motivations and benefits:

- “What were your reasons for requesting a plot?”
- “What do you get out of coming to the garden?”
- “When you leave the garden, how do you feel?”
- “Do you think spaces like this change the neighbourhood?”

Community life and relationship to the collective:

- “How do you interact with other gardeners?”
- “Are there any collective events? Do you participate?”
- “Are there things that can cause disagreements or conflicts?”
- “Are you part of the voluntary board of the association? What role do you play in it?”