



# THE UNIVERSITY IN THE POST-COVID CITY

APPROACHING THE CASE OF NIJMEGEN  
AND THE RADBOUD UNIVERSITY

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## APPROACHING THE CASE OF NIJMEGEN AND THE Radboud University



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## Preface

Since the beginning of the pandemic and after seeing the huge impact it has had on our lives, there has been a great deal of interest that can be seen in numerous investigations during the course of the pandemic on how it will affect the way we live, travel and interact -in short, how the post-COVID world will work-. At present there are still many unknowns about what the much mentioned "new normality" will look like and probably until we are fully aware of the actual impact and duration of the pandemic we will not be able to visualise a more accurate picture of the post-COVID world. We should keep in mind that when we try to visualise what certain aspects of life will be like in the new normality the conclusions we come to are predictions, mere speculations that of course are not reached by "shooting in the dark", but after rigorously analysing the information we can handle so far. It is therefore important to clarify that this thesis starts to be written in February 2021, when restrictions have not ceased yet in most parts of the world. For example, at this moment, in the Netherlands -from where I am writing this- non-essential businesses remain closed and there is a curfew at 9pm. Several vaccines are already circulating internationally and the slow and progressive vaccination process started a month ago. However, there is still some instability in the timing of vaccination predictions -depending on external factors such as vaccine production and arrival of vaccines- and it is not yet possible to estimate when we may begin to experience the "post-COVID" era itself, so there are those who have not yet begun to see the light at the end of the tunnel. In this context of ongoing uncertainties I am fully aware that it is risky to undertake an in-depth study of a specific aspect of the post-COVID city as unexpected changes that intensify or mitigate the effects of the pandemic on society could change the conclusions reached in this thesis. But I do think that the exceptionality of this situation allows -and requires- that these risks may be taken because of the urgency of knowing the post-COVID reality.

Without trying to do the work of a fortune teller, I simply believe that by observing and analysing a series of clues such as the direction of global trends in recent decades or the effects that the pandemic is having on the different stakeholders, we can put together the pieces of the puzzle of what the world may hold after COVID, more specifically, the role of the university within the post-pandemic urban context.

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## Summary

The world after the coronavirus pandemic will not be the same as it was before. This is why since its outbreak at the beginning of 2020 it has been a major concern to know the extent of the consequences of the pandemic. Both the university and the urban environments -which have both undergone many modifications during the pandemic- will not be spared from multiple changes, which leads us to ask ourselves how the university will fit into the city in the post-COVID scenario. The aim of this thesis is to approach the university-city relationship in a case study in order to find answers to this unknown that has not been addressed much so far.

First of all, following the premise of Critical Urban Theory that urban issues are part of global patterns, I have started from the assumption that the world stands in a certain context that is essential to understand in order to get an idea of where we can head in the aftermath of this crisis. This is why I speak of a set of behavioural patterns that are of course not unrelated to the two key spheres in this study -the urban and the university-. Linked to this idea, I argue that for years there has already been a debate both in universities and in cities in general about the search for new models, for a series of drifting changes which in this thesis I call a process of "reinvention" and which to a large extent is due to their placement in relatively unsustainable trends.

In this scenario the COVID pandemic broke out forcing us to adapt from one day to the next to completely different circumstances, and to change our habits for at least a year and a half. Through this study I argue that this crisis has a great potential for reinvention because, on the one hand, it acts as an "accelerating factor" bringing the need to address challenges that seemed to correspond to a time in the future -such as the consequences of increased technologisation- and, on the other hand, because some aspects of the pre-COVID world have been exposed due to the negative consequences of the crisis. Understanding these premises and based on a large selection of literature, I have been able to identify a number of potential changes with respect to pre-COVID times in both the urban and university spheres.

Once outlined this idea of post-pandemic university and city I have approached the city of Nijmegen, where Radboud University plays an important role as it is the reason why thousands of students come to live every year, in order to reflect on how Radboud will be integrated into Nijmegen in such a changed context. To do so, I have addressed different dimensions that I had previously identified as likely to undergo significant changes and that in some way relate both entities, which are student housing -as a student oriented business within the city-, urban mobility -including possible changes in accessibility to the campus-, the campus itself -as the urban space where the university is located-, and the university and youth facet of Nijmegen. Through a series of interviews with stakeholders in these areas about what they can expect from Nijmegen/Radboud after the pandemic, I have been able to draw a number of conclusions about the role of the university in the post-COVID city: 1- The existence of a period in which we are already immersed where the COVID variable is a fundamental aspect to be taken into account, but where it is more accurate to speak in terms of

"adaptations" than of radical structural changes. 2- This crisis has paved the way for the digitised university of the future, but however profitable it may be, uncontrolled shift would end up being detrimental to both the city of Nijmegen and Radboud University, which advocate a more controlled and gradual change. 3- It does not seem that the university facet of Nijmegen will be affected by the consequences of the post-COVID university as could happen in other university cities. However, all parties insist on the importance of remaining attractive and therefore the university-city relationship is strengthened by this crisis in Nijmegen. 4- The sustainability factor is a fundamental basis for the future integration of Radboud into the city. The post-pandemic scenario in which Radboud and Nijmegen relate to each other will follow this premise given the emphasis of all parties. 5- The post-pandemic Radboud will help to determine the direction of the city in many ways, e.g. it will make Nijmegen a much more internationalised city or will be key to the new mobility in the south of the city, among others.

# **1. INTRODUCTION**

## **1.1. Introduction to this research**

This thesis consists of a study on the impact of the COVID crisis on universities, specifically on their urban dimension, understanding them as structures inevitably linked to the city where they are located. I will try to find the keys for how the future university will be integrated into the city, taking for granted that both universities and cities are undergoing an important reinvention process in which the pandemic, if it is not the main culprit, has been an important accelerating element.

### **1.1.1. Why the case of Radboud University in Nijmegen?**

Universities play a certain role within the city and this role is not necessarily always the same but depends on many factors: their location inside the city, the type of students they attract, whether they have a defined large campus or are spread across buildings in different areas of the city, their capacity to digitalise, their size in relation to the city, or even the type of studies they offer, among others. Similarly, the consequences of the pandemic will not be identical in all cities, but will also depend on many factors. Therefore, we can be sure that the adaptation to the future post-COVID reality will not necessarily be similar in cases of completely different cities and universities. This is why I find it necessary to focus on a specific university for such a thesis.

I have decided to focus on the Nijmegen case for two simple reasons. The first is that I am living here, next to the campus of Radboud University, so it is a close case that I am experiencing first hand and it is of particular interest to me. Moreover, this means that it will be easier to get in touch with personalities who can be useful for this study, for example through the university.

The second reason is that I think Nijmegen is a good example of a medium-sized city where the university has a great weight, and this is something that can be easily perceived at a quick glance: a high percentage of its population are university students, it has a large campus integrated into the urban fabric of the city, there are many housing complexes for university students spread all over the city... In fact, on the Radboud University's own website Nijmegen is referred to as a "former student city". In this way, the university and the city itself have a lot of influence on each other which can lead to a very juicy study with a lot of changes to be highlighted. That is why I think it is very interesting to study the role of the post-COVID university in such a city.



### 1.1.2. Research questions

The aim of this research is to outline a possible and more or less precise answer to the following question:

- *How will the -post-COVID- Radboud University fit into -post-COVID- Nijmegen?*

Naturally, two clear sub-questions inevitably arise from this question:

- *What will the Radboud University be like in the future?*
- *What will Nijmegen be like after the pandemic?*

These hard questions cannot be answered if we do not break them down and focus on the different aspects that make up both the city and the university, thus giving rise to further sub-issues that will need to be addressed and which will give an ordered sense to this thesis, such as:

- *Considering pre-COVID trends (where was the urban and the university heading before the pandemic broke out?)*
- *Analysing the new challenges brought by the pandemic and see how they can be reconciled with existing ones.*
- *Study the extent to which future university structure will affect mobility in the city.*
- *To discuss how the consequences of a university towards the online can affect student housing across the city.*
- *Considering how the university campus can be adjusted to the university of the future.*
- *To see to what extent a possible new future university model may affect student life in the city.*

### 1.1.3. Theoretical framework

#### ***What is critical urban theory?***

Critical urban theory emerges from the critical theory of the Frankfurt School, and therefore shares the theoretical and reflexive spirit that characterises it. From a more theoretical point of view, we can say that it makes sense by criticising societies based on instrumental and technocratic reason (Brenner, 2009) which questions the ultimate ends of knowledge and seeks success in efficiency and unlimited exploitation. Thus, by focusing on the urban question, critical urban theorists critically oppose the ideologies of the dominant global urban condition -such as the Chicago school approaches to urban sociology, or the more neoliberal forms of political science- by "rejecting instrumentally motivated urban analysis and by being concerned with delving into alternative and emancipatory forms of urbanism" (Sevilla Buitrago, 2018).

Probably the most characteristic feature of critical urban theory is its global character, as it defends the idea that urban questions are part of worldwide patterns and their consequences are no longer confined to a single space. Contemporary urbanisation is conditioned by contradictory and hierarchical social relations and institutional forms of capitalism, which makes the urban global and all political, economic, social and environmental relations are interlinked. Of course, this idea clashes with traditional

dichotomies -such as urban/rural- arguing that all spaces on the planet, even outside cities, are in one way or another at the service of the urbanisation process. The breadth of this theory coupled with its undeniably critical character leads its theorists to understand that the impulses of capital are crucial for understanding how cities are formed and function, and therefore to analyse their development by focusing on the needs and effects of capital (Harvey, 2012), arguably in terms close to Marxism.

The changing territorial organisation of capitalism plays an important role in critical urban theory as changes in scale can provide a new conceptualisation for understanding the shifts brought about by neoliberalism. Neil Brenner, who emphasises much of this rescaling in his work, speaks of an urban space where regulatory intervention moves at supra- and sub-national levels, something that does not happen randomly, but is justified by capital in its constant seek for accumulation and by the business criteria that predominate in the urban.

Brenner, drawing on reflections of Lefebvre and Harvey, describes the current process of global urban development as a strategic framework within which 21st century capitalism operates and points to the need for a new understanding of urbanisation that allows us to explore this process of urban agglomeration and its relationship with -to some extent linked to the urban- operational landscapes. He therefore calls for a new theoretical approach by pointing out that urban governance has become the governance of the planet and underlines the possibility and necessity of alternative forms of urbanisation.

To conclude, paraphrasing Brenner (2009) again, "critical urban theory involves the critique of ideology -including socio-scientific ideologies- and the critique of power, inequality, injustice and exploitation both within and between cities".

### ***Why critical urban theory?***

So, what makes this approach suitable for this study? There are four arguments that I will use to defend why I will address this thesis through the prism of critical urban theory.

- Firstly, I believe that having a broad and global approach that takes into account the previously given scenario and context in which the urban takes place is very positive for a study where the identification of spatial urban dynamics is of great importance. This allows us to zoom in, understanding first on a large scale the global patterns that govern this urbanised world, as a way to end up approaching the urban and university field of the specific place to be studied. Some criticise this approach precisely because it is so broad that it can lose some capacity for analysis and concreteness, but I argue that, for this specific case, in order to address the main research question it is crucial to take an approach that is aware of the previous existing imbalances and relationships.
- In second place, this perspective suits the object of study because of the potential for change that the COVID crisis itself has. Since the beginning of the

pandemic many possible changes in all fields -logically also in the urban and university fields- have been speculated as a result of the consequences of the pandemic and through critical urban theory we can take a look at how this crisis can alter these global conditions in order to get closer to more accurate results with reality. I believe that the key topic of study -COVID- itself requires a scale-up in order to address the issue with more perspective.

- On the other hand, the critical approach of critical theories has evolved significantly as capitalism has developed because this critique must be constantly updated in order to be valid. Given the possibility that such a changing event as this crisis will lead to significant alterations at a global level, it is convenient not to stick to a very concrete scale, but to observe broadly in order to keep aware of how the planet -ergo the urban- works. In short, using critical urban theory in such a study is a way of advancing contemporary urban thinking.
- Finally, the decision to take this perspective is also the result of evaluating and discarding some of the relational approaches of urban geography. One option could have been to focus on assemblages, but this would lose the critical engagement with global patterns that the COVID issue requires. The global context is very important to glimpse in which direction changes will come after this crisis, and that is easier to approach from a critical perspective that takes into account these global patterns, rather than by studying assemblages, which would be more effective to understand how the wholes that form complex social systems are constructed. The same critique applies to actor-network theory which also assumes the current conditions of cities uncritically, justifying their imbalances, and thus tends to forget the context while focusing on the actors. Moreover, practice theory was discarded from the very beginning because I consider that the study of social practices is not suitable for dealing with issues related to a possible future, i.e., it is difficult to analyse some kind of routinised practice from which to obtain conclusive information, when the aim is to approximate how things will work when the pandemic is over.

#### **1.1.4. Methodological framework**

For this study I have used qualitative methodology more specifically a grounded theory analysis since the aim of this research is to better understand a problem that is still in its preliminary phase, which means that instead of having a specific hypothesis that I want to corroborate, I have relied on an exploratory research focused on a case study in order to reach a theoretical conclusion. For this purpose, I can summarise the process of this grounded theory analysis in the following steps.

Firstly, the collection of information which in this thesis is carried out in two different ways. On the one hand, by reading and summarising a wide range of recent scientific articles -being such a current topic there is a lot of recent literature that can be useful for this study- where I have collected different reflections and points of view on how the post-COVID world, its cities and its universities will function. On the other hand, the

information gathering has also been carried out through a series of interviews. For this purpose I have contacted a number of personalities interested in this topic and in this specific case and whose visions of the future may be very interesting for this study. These interviews have been semi-structured, meaning that, although I have prepared them in order to know how to conduct the interview there is some flexibility in order to gain as much information as possible from the interviewee.

The next elementary step is coding. It should be noted that all the qualitative data analysis was carried out manually, without using any software to help me coding the collected information. The volume of this information was not so excessively large that it was impossible to handle it on my own, so I decided to do it this way. The first part of this thesis -the information gathered from the extensive literature- serves to establish a number of sections that I will emphasise later on, allowing me to write a kind of initial pre-code list, where I have identified categories and sub-categories that I will emphasise in the second part of the thesis. For example: Category: reconceptualisation of campuses. Subcategories: use of their buildings, spatial development strategies in relation to the city, obsolete aspects of campuses, the role of the campus in the future university, its dependence on budget issues, etc.

Once these codes have been identified I then contact the respondents to be interviewed. They belong to different fields related to the topic of the thesis identified in the list of codes I made earlier, so different perspectives will be collected. I started with a small number of potential interviewees not all of whom agreed to be interviewed, but from here on I used the snowball sampling technique to reach a larger number of interviewees.

This is the list of different people to interview, although I was not able to interview all of them.

Name	Function	Area
Ilse Nieskens	<i>Senior Adviseur Economie and pandemic impact mitigation plans in the municipality of Nijmegen</i>	General / other issues
Gert-Jan Hospers	<i>RU human geography professor interested in post-COVID city matters.</i>	General / other issues
Tim Cools	<i>Housing policy advisor at SSH&amp;</i>	Student housing
RU Housing team	<i>Housing team of the Radboud University</i>	Student Housing
Harriet Tiemens	<i>Councillor for mobility in Nijmegen</i>	Mobility
Jasper Meekes	<i>Senior Policy Advisor for Spatial Development and Mobility in Nijmegen</i>	Mobility
Henk Meurs	<i>Mobility and Spatial Development at RU</i>	Mobility
Michael Haggans	<i>Retired university architect and founder of Campus Matters</i>	Campus
Koen Fleuren	<i>Head of Campus Development at Radboud University</i>	Campus
Mark Groffen	<i>RU facility management teamleader</i>	Campus
Menno Uphoff	<i>President and spokesperson of Student Union AKKU</i>	Student vision

*Figure 1: List of stakeholders asked to be interviewed*

To carry out the coding process of these interviews the first step is to transcribe them. This step was undertaken with the help of the programme Descript which automatically transcribes the recorded audio of the interviews after uploading them. However, this step also required a lot of modifications on my part as the programme also has certain deficiencies that often make the transcription not entirely accurate such as the use of filled words, no distinction between speakers' voices, words pronounced wrongly, or problems with the audio. Once the interviews have been transcribed it is time for a first superficial coding which consisted of several readings of the transcript in order to underline and organise the information a first time, classifying it into categories and taking into account the previous codes. As I said before, the flexibility of these semi-structured interviews means that part of the coding technique is also inductive, so there are some aspects where interviewees decide to put more emphasis and so new subcategories are formed that were not foreseen before. That means that the codes are constantly being modified. In the last part of the coding, which we can call "formal"

coding, and after making the necessary annotations to each piece of text, I grouped all these fragments according to their category and within that their subcategory, also taking into account the importance given to them by the interviewees -for example, evaluating their frequency-. In the appendices of this thesis, which will be in a separate volume, I have attached a hand-drawn outline of this study which helped me to organise myself and on which one can see how I came to these categories/subcategories.

This was followed by the interpretative phase where the ideas organised in the codes are shaped, in other words the information obtained in both phases of information gathering is related according to its category, for which it is necessary to make comparisons and connections between concepts. The aim is to draw meanings and conclusions from the integrated information. Of course, there is also a "modification" step that takes place throughout the entire process. This means that, for example, at various times there are parts of the collected information that do not fit neatly into categories or subcategories, or that through the pattern of serendipity comes across something by chance that was not looking for but that is very convenient to introduce into the study. Therefore, there is a constant process of re-reading and re-coding through which I have been modifying what I thought was appropriate, shaping the final outcome. The last step, of course, is the redaction of the already classified notes, where I have tried to make legible the ideas already modified from the previous section. For this part I have related the different categories to each other and to the main topic, so that I have been able to draw the pertinent conclusions on the university-city relationship in the aftermath of the pandemic in Nijmegen.

#### **1.1.5. Societal relevance**

I consider that it is unquestionably important at a social level to study the possible consequences of this great crisis within the global context in which we live, as it is something that inevitably affects us all. How we understand and use space -or the universities-, the possible changes in the way we relate to each other and what our relationship with the city where we live will be like is something that directly affects us as a society. Within the academic world there was already some interest in the university of the future but with the outbreak of the pandemic questions that seemed distant in time have appeared in the present, and so this concern about the direction universities should take for the future has grown. In the last year, a number of widespread changes have taken place that have given rise to the possibility of evaluating alternatives that may be more profitable, lucrative or competitive, and that may lead to a shift in the way universities exist that may have consequences for the university dimension of cities. Therefore, it is not only a relevant issue for the academic world but in some way influences the city as a whole which is likely to experience changes due to COVID. Through this thesis, analyzing the direction in which the urban is moving and based on visions, I will try to approach the mystery of how the university of the future will have consequences in the city. In addition to this, I think it can be very relevant for the

population to question whether we are going in the right direction and whether we are being critical enough with the global patterns.

#### **1.1.6. Scientific relevance**

There are several studies -and due to the currency of the subject, more and more every week- that try to analyse the real consequences that the pandemic will have on our society in an attempt to approach the post-COVID world. Among these, only a few have focused on urban aspects and on "imagining" the city of the future after COVID although with different perspectives, focusing on diverse urban aspects. And on the other hand, to the already existing debate on the university of the future there are already some who have updated it by including the COVID variable which is absolutely essential to try to visualise the shape that universities will take from now on, after the changes that we assume will come in the near future. In this thesis I will contribute to the existing debate on the post-COVID world by combining precisely these two aspects -the university within the urban-, a perspective that has not yet been analysed. I believe that the possible characteristics of the post-COVID university may have major consequences for the city of the future especially in a case like Nijmegen, at the same time as the post-pandemic urban context will influence the university. This is an alternative way of addressing the consequences of COVID in the city that may have great relevance in this urgent and recent global debate.

#### **1.1.7. Thesis structure**

The study will be divided into three main sections and a final reflection. In the first block -Section 2 according to the table of contents-, the problem will be addressed in a more extensive way. I will look at what we can expect in the post-COVID scenario, by first critically analysing the framework of global trends that can serve as an indicator of "where we were going", then I will focus on the challenges facing the urban and how they can be addressed, and then I will focus on the post-COVID university, what challenges it faces and what possibilities it has. In order to write this first section, extensive bibliographical research will be necessary to reflect interesting reflections and the most recent debates on these issues. In the second section I will focus on my chosen case study, the case of Radboud University in the post-COVID city of Nijmegen. As a first sub-section I will introduce the case study, justifying it and presenting the characteristics of the city that are relevant to this study as well as the role of the university within it. As a second sub-section I will outline and explain the stakeholder interviews by describing the valuable information I have obtained in relation to this study and reflecting on the findings for each of the issues addressed. For this I will group them into different groups according to the urban/university facet they correspond to, following the logical order of the sub-questions presented in Section 1.1.2: a general vision, student housing, campus, mobility and the impact of the future student life in the city. In the third section, as a conclusion, I will relate these findings to the research questions, listing the different conclusions reached.



## 1.2. Short introduction to the problem

When 2020 began no one could have imagined that such sudden changes would take place in the way we live and understand our environment, but the outbreak of the pandemic caused by COVID-19 changed this. Now, a year and a half later, our lives are still largely conditioned by the pandemic and there is some concern about what changes this will bring to our daily lives in the future, and in general, the shape of the post-COVID world is still quite uncertain.

Local and state governments around the world have been forced to follow different strategies to contain the spread of the virus -depending on the impact of the virus in each region and their economic priorities- and there have been a number of common guidelines and advices from international authorities whereby these strategies have been moving in the same direction, such as the use of face masks, equipment of hygiene systems such as hydroalcoholic gels, closure of businesses to prevent the congregation of people, curfews, or in the worst case, total lockdown, which have given rise to a new reality. This new, apparently momentary, reality may have major consequences for our society -the most talked about are changes in our future habits such as the way we greet each other, more frequent hand disinfection, or greater use of face masks for simple colds-, but the most significant changes are arising from the urgent need to "rethink" multiple aspects of the way the world works. The unexpected outbreak of the pandemic forced us to undergo many changes in a very short time, reopening old debates and questioning aspects of everyday life that previously seemed unquestionable, like teleworking.

All epidemiologists and virus specialists agree on one thing: *this is not the first pandemic, nor will be the last*. This statement, on the one hand, warns us of the need to focus on new models in which it is possible to prevent the next pandemic before it starts, but on the other hand it invites us to look at previous epidemics -even more so when we want to study the scenarios that may come after this one-. As Rodríguez-Pose (2020) points out, these great epidemics of the past, such as the Black Death, the cholera outbreaks of the 19th century, or the Spanish flu have always hit cities with great force but they have brought with them a series of changes and improvements like the more hygienic Renaissance city model, the arrival and improvement of sewage systems, or healthier urban drainage and sanitation systems<sup>1</sup>. Through this, I think we can draw two lessons: first, we understand that the changes and corrections that -to a greater or lesser extent- arise after these events that alter daily life for a time are far from being exclusive to this crisis. This time, however, we are in a much more technologised scenario that is more capable of bringing about change which can be translated into a wider range of possibilities for change than in the pre-COVID world. Secondly, this reveals the great

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<sup>1</sup> Rodríguez-Pose, Andrés (November, 2020). Conference on *Cities in a post-COVID world* at University of Alcalá. Spanish Regional Science Association.



relevance of "the urban" since the role of cities has been very important in the spread of these past pandemics not only as points of infection because they are more crowded population hubs, but also because of their role as "nodes" in a more international network -e.g., it has been shown that medieval cities with an important commercial role were hit harder by the Black Death<sup>2</sup>, or that the rapid spread of cholera outbreaks among large cities in the 19th century is closely linked to the invention of the railway<sup>3</sup>-. So, coming back to the present, we can get an idea of how important it is to focus on "the urban" when we try to analyse what will come after the pandemic on a planet undergoing a global urbanisation process where the influence of cities is not only infinitely greater than it was a few centuries ago, but is constantly growing. That is why this thesis, right from its title, refers to the notion of "city" after the pandemic.

In order to get a closer look at the future effects of this pandemic it is necessary to look at pre-COVID global trends, i.e., where was "the urban" heading when the pandemic appeared -a question I will focus on in the second section of this thesis, but which is worth introducing superficially-. Brenner and Theodore (2002) already warned us two decades ago that the undeniable process of globalisation is part of a generalised shift from the national to the local through what we call "glocalisation", which is closely linked to the pillars of political and economic neoliberalism -liberalisation, reduction of the state, competitiveness, individualism...-. These neoliberal forms of urbanisation for many theorists present certain ambiguities and question their sustainability, as to a certain extent they only intensify the main -and urgent- challenges of cities which broadly speaking are about how to make cities environmentally, spatially and socio-economically sustainable. In this context where the world is moving towards the urban and the urban presents a plethora of challenges that many professionals all over the world are looking to address, the pandemic arrived.

The arrival of the pandemic and its consequences have aggravated many social vulnerabilities, so these pre-pandemic urban challenges remain urgent but now include a new variable: COVID. A large part of the research on the post-COVID world points to the fact that we must understand the pandemic as a turning point where cities must opt for a "reinvention" in which "the relationship between individuals and space, the management of social relations, the conditions of habitability and mobility within the urban environment occupy a great deal of attention" (Gesto, J., 2020, p.20), and urban policies must take the path for cities to become sustainable, smart and inclusive while taking into account the new post-pandemic reality and improving their capacity to respond to future pandemics. That is why in the wake of the pandemic urban alternatives are gaining momentum, which I will explain below.

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<sup>2</sup> Gómez, J., Verdú, M. (2017) Network theory may explain the vulnerability of medieval human settlements to the Black Death pandemic. *Sci Rep* 7, 43467.

<sup>3</sup> Huber, V. (2006). The unification of the globe by disease? The international sanitary conferences on cholera, 1851-1894. *The Historical Journal*, 49(2), 453-476.

This reinvention of which I refer is the result of a sudden need to adapt to the conditions of the pandemic and is not only manifested in cities -through a greater dependence on technology, changes in mobility, or the redefinition of uses and spaces- but can be seen in many other fields. In this thesis I will focus on the role of universities in the urban context, because like cities, there is a great concern for the reinvention of these institutions that has been heightened by the emergence of the pandemic. The rise of online classes and the speed with which universities have adapted to new technologies from one moment to the next has opened the debate on what the university of the future will be like and what direction these institutions should take. Through this thesis I want to frame this unknown within this changing urban process as these possible future changes will affect the relationship between universities and the cities in which they are located.

## **2. THE WORLD AFTER THE PANDEMIC. WHAT CAN WE EXPECT?**

In this second section of this thesis I will try to sketch the scenario in which cities and especially universities will find themselves after the pandemic, that is, I will try to address the unknown of what we can expect in this post-COVID stage. In order to know what the future effects of this crisis will be it is necessary to analyse how the world functioned until then, what were the patterns and dynamics that were driving the world, in other words, in which direction we were going when the pandemic broke out. Therefore, I believe that in order to understand some of the new challenges facing both cities and university institutions in the wake of COVID, it is first necessary to understand the global trends of recent decades that set the pace of the planet's development and which may have been significantly influenced by the pandemic.

### **2.1. Worldwide framework**

It is evident to say that the contemporary history of humanity is marked by great and rapid transformations in many areas -social, demographic, economic, technological...- and throughout this history we can find a large number of periods succeeded by the distinguished success of different ideological currents, social movements or socio-economic models. In short, along history there are an infinite number of dynamics and trends that, as a whole, direct the functioning of the world around us. When we talk about recent global trends, I think it is necessary to start by mentioning, on the one hand, the enormous technological and scientific progress of recent decades, and in parallel the rise of neo-liberal ideology since the last quarter of the last century which spread rapidly and hegemonically. I consider the latter to be of great importance since I believe that it underlies a large part of the dynamics that govern the functioning of the planet at practically any scale. Of course, both the urban and the academic are to some extent driven by this neoliberal logic.

In general terms, when we speak of neoliberalism we are referring to a current that made its way after the crisis of Keynesianism-Fordism (1970s), which advocates a "modernising" structural adjustment towards a deeply capitalist stage, where some of the tendencies that were validated revolve around ideas such as "market liberation, accumulation in a global space, or the transition towards a consumer society" (De Mattos, 2014, p.2), thus, under the premise of "commodifying as much as possible" (Idem, p.5), it opposes the idea of the welfare state and advocates a major reduction in state interventions. This premise, according to Brenner and Theodore (2002, p.341), is at the core of neoliberal ideology and can be summarised as "reliance on open, competitive, unregulated markets, freed from all forms of state interference, to represent the optimal mechanism for economic development". The fact that market liberalisation and deregulation is such a central point within this current can give us a clue to some of the characteristics of the scenario that emerges as a consequence, where private capital has much greater power, a much more competitive nature predominates, there is a much more individualistic conception and austere policies

abound. It is true that the effects of neoliberalism have not been identical everywhere - what Brenner et al. (2010) call "variegated neoliberalism"-, but these features are more or less common in this period.

Within this framework of neoliberal governance alarming cuts in public services have taken place over the last decades resulting from reforms of restructuring and downsizing of the state that in the context in which we live are unsustainable (Davies and Standing, 2020), and which generated considerable social discontent in many places. Meanwhile, in turn, strategies favouring the private sector, such as public-private partnerships, have been implemented. This reduction in the role of the state favours the replacement of the logics of regulation and distribution by competitive logics which, as Palermo (2020, p.1) argues, from the economic sphere invade the cultural, legal, ideological, etc. "assuming the role of universal regulator of social relations". An example of this -using the theme of this study related to the COVID crisis- is that which Navarro sets out in his publication *The Consequences of Neoliberalism in the Current Pandemic*, where he criticises the behaviour of the large pharmaceutical companies that systematically prioritise their objective of maximising profits: "this commercialization of medicine and prioritization of private interests over public ones have affected very negatively the health and quality of life of millions of people" he states, insinuating that this way of acting has also been to some extent to blame for the huge impact of the pandemic. To sum up, we could describe the scenario of the last decades as not very social, where the individual outweighs the collective and, therefore, ideas such as "social justice" or "collective projects" do not have much room (Quintana, 2019).

On the other hand, ideas such as free circulation, the challenge to the limits of the state, or the priority of the global market, added to the changes brought by new technologies in recent decades -towards greater connectivity and mobility-, have laid the foundations for the growing process of globalisation in which we live -and in the same way, globalisation has facilitated the expansion of neoliberal agendas around the world-. This means the intensification of a global scale of flows -financial, productive and consumption- "that has shifted the geography of capitalist economic dynamics towards changing scales" (De Mattos, 2014, p.6). The multi-scale facet of this phenomenon is also very important to describe the dynamics of a scenario where the opening up to an increasingly global scale has given rise to a greater importance in the sphere of "the local" to the detriment of the national scale. From this arises the idea of *glocalisation*, which can be summarised in the statement "think globally and act locally", i.e. the adaptation from the local -depending on the peculiarities of each environment- to the demands of global patterns.

Although at first glance it may seem that these behaviours and trends do not have much to do with the central theme of this thesis they are in fact closely related to the urban and university post-COVID world. For, as I say, this dominant logic goes far beyond the inclinations of a particular economic system. It is a complex global perception with many dimensions, which is embedded in even the most everyday spheres of our lives and it

carries enormous weight in this idea of rethinking the post-pandemic world because both the urban sphere and the university sphere are heavily influenced by this dynamic.

### **2.1.1. Urban sphere**

As a consequence, cities in recent decades have come to be managed under a neoliberal urban model that follows purely corporate logics -such as the idea of making the city an attractive brand (Harvey, 1989)-, and thus face the new urban landscape that would emerge as a result of the rise of technologies or the growth of the urban world. First of all, it is worth emphasising the latter: the undeniable process of planetary urbanisation and, consequently, the global reshaping of geographical scales that I mentioned earlier. In the middle of the last century the world's urban population barely exceeded 30% of the total population, but this has changed dramatically to the point where the UN forecasts a world urban population of close to 70% by 2050, and in Europe today 74% of the population lives in cities. Some of the factors that help to explain this phenomenon have already been mentioned in this section as they are related to the inclinations of this global framework, such as the fact that we live in a more globalised and interconnected world, the idea of territorial competitiveness -instead of cohesion- or the restructuring of the world economic geography that gives greater prominence to large cities. As De Mattos (2014, p.3) argues, "the reforms and policies of neoliberalism intensified and radicalised -not generated- the urban trends that began with the industrial revolution". Lefebvre, in *The Urban Revolution* (1970), already predicted this step of the urban problematic to the global scale, worrying about an urban society that "could only be defined as planetary", and yet at that time these global trends were only beginning to intensify and their impact was not calculable. Someone who, by the way, has quoted Lefebvre often and to whom it is inevitable to refer when discussing these recent dynamics of the urban world from a critical perspective is Neil Brenner, a major contributor to critical urban theory in recent decades. He has written and theorised extensively on the direction of the urban in this global context, as well as on the new urban morphologies and the "urban-centric vision" of today's world that breaks the mould of the historical urban/rural dichotomy (2013). The growing widespread urbanisation and its more direct consequences, such as conglomerations, peripheral cities or urban galaxies (Soja and Kanai, 2007), are an example that makes the presence of these global dynamics in the urban sphere visible.

At the same time, urban governance has undergone transformations towards a much more entrepreneurial approach that is often criticised for mercantilising the development of cities. The increasing overlap between public and private through partnerships brings us closer to what some critics point to as strategies of privatisation of cities. In this way, private economic actors, for whom economic growth and the search for profitability is a central element, play an important role in the "production of cities" -in the sense that the management of certain urban goods and services is delegated to them- (Baraud-Serfaty, 2011). These financial logics, which largely determine the ways in which cities develop, favour urban centrifugation, and also a

context of growing competition -not only for investment, but also for population- both between cities -large dynamic metropolises in expansion / declining cities seeking to be attractive-, and within cities -prime territories / suburbs- (Ibid.). The consolidation of the commodification of economic and social life, combined with the growth of cities -and their improved connectivity and mobility-, give rise to conflicts such as the displacement and relocation of both companies -which are increasingly tending towards territorial dispersion (De Mattos, 2014)- and families -a consequence of processes such as the mercantilisation of ethnic neighbourhoods, gentrification, or the touristification of cities-, giving rise to an increase in new forms of urban fragmentation.

### **2.1.2. University sphere**

More than two decades ago, Slaughter et al. (1997) warned us in their work *Academic capitalism: politics, policies and the entrepreneurial university* that since the 1970s the university world has been undergoing a series of changes at the global level that are a consequence of the international macro changes mentioned in this section, and that are moving in the direction of a much more entrepreneurial spirit and a "market-oriented" alignment.

When we talk about how the university has adapted to the circumstances of today's world, we are referring to this commodification in the academic sphere and the changes in the function and behaviour of universities as a result: as major changes in university structure, shifts in the usual ways of understanding disciplines, or -as in the case of the Bologna Plan reforms- adjustments to the demands of the labour market. In other words, the university in the midst of this global context has left behind the line of traditional universities to act as "production machines" where using quasi-business strategies they need to produce knowledge at a high and competitive pace, thus seeking, once again, greater profitability. Cutting tuition intensity to reduce costs, paying high salaries to prestigious professors to attract more students -highlighting here this facet close to business marketing- or "employing contract staff instead of making full-time permanent appointments to faculty" (p. 2) are some techniques that serve as an example of how universities have changed the way they operate in search of greater efficiency as the main consideration when producing, reflecting the culture within society (Remenyi, 2020).

As Slaughter et al. (1997) state, the fact that knowledge and skills are applied in productive work has its reasons, since it benefits not only the individual academic, but also the university and the company for which he or she works. The latter, the presence of private companies and third party funds, is another aspect to highlight. In general, there are many criticisms that warn of a notable decrease in funding from the State, but this depends to a large extent on how the educational system is organized in each country. In any case, what is certain is that the increasing collection of funds from third parties has brought about major changes. Weichhart (2012), states that the amount of these third-party funds has become a criterion that indicates quality -i.e., the more

money invested in research, the better it will be-, and this "orientation towards predominantly economic concepts of utility" and "reductionist understanding of quality" ends up harming other fields such as the humanities, which do not need so much funding. This unidimensionality in criteria, where everything is equated with economic sciences (Weichhart, 2012) is another of the main characteristics of the modern university that contrasts with the diversity of scientific styles and disciplines of the traditional university. The end result of this increase in competitive funding, added to the importance that research and academic rankings have gained, is an intensification of the battle for excellence among universities in search of greater recognition from the scientific community, resulting in an "increasingly acute institutional stratification" (Munch, 2014).

These changes are in line with the direction in which the world is heading, and to a certain extent were required for universities to continue to serve the knowledge society. But they are still open to criticism from a -shall we say- Humboldtian point of view, since values such as academic freedom or autonomy are far removed from the course of an increasingly commercialized university that tends more and more towards massification and economic interest.

### **2.1.3. COVID impact**

Once we have set out the geo-historical context in which we find ourselves and the direction in which the patterns that drive the world are heading, it is time to address one of the main variables that play an essential role in the problem that this thesis addresses: the irruption of the pandemic caused by COVID-19.

#### ***Has neoliberalism been exposed?***

In the introduction to this study, I mentioned some aspects of great epidemics in history that may bear some similarities to this current pandemic, such as the importance of "the urban" or the possibility of bringing about significant changes, but it is true that there are many aspects that make this an unprecedented situation, like the enormous connection and interdependence between the spaces of the world, the systematic ideology applied to almost any part of the planet, or the enormous level of scientific and technological development. This is why it is not easy to predict or intuit the changes we face in the aftermath of this crisis. But a good beginning to start looking into the future might be to look critically at how badly the current socio-economic system has been damaged by this crisis, in order to see whether it will be possible to find some changes in the direction we are moving in, in the way policies are made or in the patterns that rule the world, as opposed to the line set out above.

One of the main things that we can see from this set of global conditions is the fact that the pandemic has come at a time when "very few aspects of economic and social life can be separated from the conditions imposed by the logic of capital" (de Mattos, 2014,



p.8). On the one hand, and as we will see below, this is perhaps one reason why the impact of this crisis has been so great in our society and its consequences have been so dire. And in turn, this is related to the fact that in the last year there has been an increase in the number of publications and analyses that speak of the weaknesses and injustices of the neoliberal logic in which we have been immersed for decades, even proposing alternative models.

We have seen how one of the consequences of this capitalist era is the abundance of austerity policies, i.e. policies based on the reduction of public spending in favour of the private sector. In general, we can state that one of the sectors that has been hit hardest by the cuts is the health sector, marked by "a market-oriented identity and monetary relations of the health systems of advanced capitalist countries" and facilitating a structure that "prioritises companies in the pharmaceutical sector" (Özkurt, 2020, p.47), and which has clearly shown the drawbacks of institutional health systems. In a health emergency situation such as the current one, behind these austerity policies -which I understand may have been defensible by focusing on the creation of economic profit- lies a clear limitation of response that has been visible around the world and has meant that public services are unable to cope with the coronavirus (McCloskey et al., 2020). Unsurprisingly for a health crisis, the situation in this sector has been the most talked about worldwide and has led us to question the extent to which economic gain should take precedence over health guarantees for all, but the criticisms do not stop there. Davies and Standing (2020) point out, in addition to the fragility of public services, the precariousness of liberalised labour markets, and Harvey talks about how these 40 years of neoliberalism in Europe have left citizens "exposed and ill-prepared for a crisis like this", among many others. In short, a very fragile starting point to face the pandemic and a constant deepening of the socio-economic inequality gap for the future have been added to other criticisable aspects of today's capitalism, leaving it in clear evidence.

More than a few critics see a persistence of the global model as unfeasible without any change, and have begun to theorise about possible alternatives, wondering what the dynamics of the global scene will be like with the end of the pandemic. Those who doubt the sustainability of this neoliberalism believe that this is a great opportunity for change to take place, taking advantage of the existing urgency to rethink essential aspects in all fields due to the new debates that have arisen as a consequence of this crisis. The very word "crisis" -from the Greek *krisis*-, means that it is a moment of decisive intervention that urgently needs to be analysed (Koselleck, 2006) and it would not be the first time that changes in political sensitivity have taken place after a major crisis -we have the example of the Lisbon earthquake in 1755 that dismantled philosophical optimism, or that of the bubonic plague that ate away the foundations of the Western medieval order (Rodríguez, 2020)-, but in what direction would these supposed changes come if there were to be any?

One thing that we can sense from the beginning of the pandemic is that existing inequalities -social, economic, territorial- will tend to intensify and the gap will widen, which is why many believe that from now on we must urgently implement a social model



where the priority is to reduce inequalities (Harvey, 2020). On the other hand, there are those who, like Goffman, see a unique opportunity to focus on environmental awareness after the environmental benefits of suddenly stopping global interconnectivity, and believe that in order to do so we must move towards a model of local globalism -produce locally, think globally- (Goffman, 2020). There are also many who speak of a "new post-neoliberal stage" (Henrique, 2020) and believe that the coronavirus will bring new global dynamics closer to socialism, such as more state planning or a large increase in public spending, as the social masses are aware of the disadvantages of "surrendering to the spirit of the market" (Özkurt, 2020, p. 47). In this line, I think that the version of Standing and Davies (2020) who speak about a post-COVID "necrosocialist" future is more realistic, referring to the application of different ideas of a more social nature -as collective action or solidarity- but sustaining the pre-COVID global capitalist dynamics in which they are embedded. Changing the global patterns that govern the world should not be an easy task, especially if it is against the will of many of those who have the most power, which is why it is difficult to imagine a change beyond the superficial. Finally, Robinson (2020) makes a different, alarming, but quite interesting point. He sees the big technology companies as the big beneficiaries of this crisis and believes that the "boom" -which in part they are already enjoying- aided by a new bloc of transnational capital will help them to control the global economy. Social inequalities and international tensions will increase in this new digitalised world in which it would not be necessary to imagine any change in the global model.

### ***Accelerating factor***

The latter, the technologisation of the world, serves as a link to expose the following essential idea to visualise the post-COVID future -or perhaps already the present-. In the last year, many people, like me in this thesis, have been interested in the consequences of this crisis on the world as we know it, and a very large majority of those who have pointed out that this crisis is already working as an "accelerating factor". By "accelerating factor" we mean the fact that the consequences of the pandemic, far from bringing about new and radical changes of tack, have, at least for the moment, been accentuated. That is to say, hand in hand with increasing technological development, they have brought to the table discussion points that were bound to come sooner or later, but no one expected this to happen now, let alone from one day to the next. By these changes I am referring mainly to a huge technological leap -for which we are probably not all prepared- and above all to the many aspects that need to be rethought that lie behind this digitalising change.

One year ago, the pandemic declaration led to a huge global change in even the most everyday aspects of our lives such as the way we work, go to school, use public space or relate to each other. Since then, a year full of different restrictions has set the tone for our lives. In many places, the peak of restrictions -between March and May 2020- was no less than total lockdown quarantine for several months, and in many other areas a partial lockdown was also imposed. Throughout this year, there have been different

stages or phases in which, depending on each administration and the disease situation in each place, restrictions such as curfews or limitations on the number of people - whether in establishments or public places, going out on the street together or gathering in a house- have been applied. The mere fact of not being able to live as before from one moment to the next, preventing many people from carrying out their working and social lives, has forced us to rethink the way many things work and adapt to the new reality with the technological resources we each have at our disposal. Examples of this can be the great importance that video meetings have gained in the business world, shops that offer you the possibility of buying their products from home through their web platform, the rise of artificial intelligence that is helping to manage this crisis through the identification of patterns or, one of the most prominent cases and fundamental to understand the problems that I raise in this work: the move to online education due to the impossibility of bringing so many people together in the same physical place. Here is the accelerating factor. Probably no one would be surprised to think that these facts would exist decades from now, but nevertheless, as a consequence of this crisis, they are now part of reality.

As economic geographer Rodríguez-Pose answered to a question at a colloquium on post-COVID cities at the end of 2020, "those who do not have the capacity to renew themselves will tend to suffer", meaning that this leap to online is likely to accelerate globalising processes. It is therefore logical to think that the post-COVID world will be much more digitalised and technology-dependent. On the one hand, because it is compatible with the restrictions demanded by administrations to stop the spread of the virus. In other words, far from requiring so much physical contact, they avoid it, and this preventive factor for future pandemics is of great importance -recalling the warning from epidemiologists that we highlighted at the beginning that this will not be the last pandemic-. Moreover, on the other hand, because those who have had the resources to take this step have discovered new ways to carry out their activities in a more efficient, lucrative, competitive and economically profitable way -neoliberal principle mentioned above- than they were doing before. For example, by implementing teleworking, many employers have realised that it is possible for their employees -or at least a large part of them- to work from home, saving the company a good deal of money. This is why, in line with Kudyba (2020), the consequences of COVID, although catastrophic for many companies, can bring long-term benefits for those that have had the technological resources and opportunity to adapt. As a consequence of this rapid transformation many, again, have been left behind, the huge gap continues to open up.

## **2.2. Post-COVID city**

The purpose of this study is to research the role of the university in the aftermath of the pandemic, conceiving it as an institution embedded in an also changing setting such as cities. Therefore, it makes sense to examine and analyse these two major aspects -the urban and the university- separately and then seek answers by bringing them together.

We will begin by focusing on the post-pandemic city and analysing those urban aspects where we can presume there will be -or where there is already- a major impact of the pandemic and its consequences. At the outset, I would like to make it clear that in this section I am trying to outline the general lines of the post-COVID city, assuming that each case will be somehow different depending on the incidence of the disease, the measures implemented and the capacity of each city to redefine its uses and spaces. (Rodríguez-Pose, 2020).

The previous section has provided a basis for realising the direction in which the world is largely heading and also for showing that in cities -as in other fields- there is a need for changes to make them more sustainable. This, of course, is not a new discovery, as the term sustainability has been on the agendas of cities for years making their future direction an interesting point of debate even before the pandemic. As cities have gradually grown, and with them their increasing concentration of people and activities, new and complex social, economic and environmental challenges have arisen, in some cases of considerable urgency -such as air, water or soil pollution- (Keivani, 2010), but it is also true that alongside the threats there are also increasing opportunities to create more sustainable cities, and today's city -more technologised and ever-growing- is equipped with greater potential to address many of these challenges. Thus, we must know how to take advantage of the benefits offered by this particular context that "can lead us towards a more virtuous circle of development, with more equitable growth, habitable spaces and controlled pollution levels" (*Idem.*) We can then say that the main urban challenges in general, at least so far this century, are issues related to making cities more sustainable both in socio-economic terms -spatial balance, social inclusion, improving the economy...- and, of course, in environmental terms -reducing GHG emissions, moving towards a greener city, urban waste management or minimisation...-. This is why, before the outbreak of the pandemic, there was already discussion of a needed "reinvention" of the city model in which the urban is compatible with the sustainable.

In this context of searching for a new way of thinking about cities, the pandemic caused by the coronavirus broke out a year ago, as we all know, with terrible consequences in many cities. As Honey-Roses et al. (2020) state, COVID and its consequences have highlighted some of the characteristics of cities such as close personal contact or marked social inequalities, and the impact on economies has been notable which in some cases can be translated into greater inequality and a worsening of social vulnerabilities. Clearly, the extent to which the impact of the pandemic has been devastating depends very much on the context of each city and its preconditions, but in any case it has left an indelible mark on their daily lives, marking a before and an after. The fact that the urgent pre-COVID urban challenges have become even more important, and that this is a unique moment of change where many aspects of the city as it was needed must be rethought, makes many emphasise that this situation must become a turning point and redirect cities towards social and environmental sustainability and planning assessed from "new dimensions and perspectives" (Gesto, 2020) by rethinking the standards of

urban design. Thus, those things that were ripe for change now have a new opportunity to be incorporated (Newman, 2020) in this post-COVID scenario.

But how different will the post-COVID city be from the city of 2019? Where will we find differences? It is true that today the vaccination process is moving fast and therefore many of us are already beginning to glimpse a near future without restriction measures. We are closer than ever to living the proper post-COVID city. In that case it is very likely that the structure of urban life will remain the same but that is far from saying that there will be no changes in cities, as some operational and regulatory changes will take place (Florida et al., 2020) such as the emergence of new technologies, major changes in mobility, or urban designs that promote social distance and limit touchpoints. At the same time, it would be logical and ideal for these changes to be accompanied by changes in their urban policies to strengthen their risk preparation and response capacity, and thus become "more resilient, smarter, sustainable and inclusive" (UN, 2020).



*Figure 2: Picture taken in July 2021. In a busy area (centre of Nijmegen), it is recommended to wear a face mask, contactless payment and to be aware of the social distance.*

Further technologisation in some aspects of cities would be a logical response given how smart solutions have often been useful in assisting in the development of more effective and efficient response and recovery measures -e.g. predicting patterns of spread, reporting measures, handling and analysing Big Data or facilitating quarantine measures- (Sharifi and Khaarian-Garmsir, 2020). Here again reference must be made to the notion of "accelerating factor" explained above as this pandemic has provided an opportunity to test the suitability of smart solutions to solve societal problems after many years of heightened interest and breakthroughs in their use (Chen et al., 2020;

Kummitha, 2020). Therefore, many see this opportunity as a necessary push towards the smart city where not only efficiency but also sustainability are two fundamental premises. Furthermore, as Newman (2020) argues, a group of innovative technologies - renewable energy, electromobility, bio-based urbanism...- will be a strong base for the post-pandemic city.

In the more everyday aspects of city life we can also observe changes related to new technologies, such as some tentative changes during the pandemic that will end up staying. An example of this might be booking through an app before going somewhere, which was very common when businesses gradually opened, and which in some cases such as libraries has proved to be quite efficient and is likely to remain in many places, as the alternative in the pre-COVID city was to go and wait for a vacant seat. On the other hand, while technological approaches have proven successful in facilitating coordination, information sharing and controlling disinformation to combat the virus, they have also given rise to concerns about citizens' privacy (Sharifi and Khaarian-Garmsir, 2020), as the most efficient way to solve problems could involve the publication of geo-referenced data or a very intense surveillance network and this would undermine our privacy, so this will be a debate that will gain importance as we move towards smarter city models.

Spatial uses within the city, as well as "the design, perceptions and management of public space" (Honey-Rosés, 2020) are also undergoing a series of changes, what we might call a "process of adjustment" to the characteristics of the new city. As I mentioned in the previous section, it is quite likely that in many cases there will be a move towards "mixed teleworking" where it is not always necessary to go to the workplace to work. This, according to Rodríguez-Pose (2020), will lead to less demand for business and commercial land in cities, especially in retail, which would further accelerate a trend already existing in the last decade where companies, instead of tending to cluster in CBDs, opt to disperse in other peri-urban areas of the city (De Matto, 2014), which is possible thanks to the increased connectivity and mobility that accompanies the expansion of cities. Therefore, the beneficiaries of this would be the suburbs on the outskirts of cities, as well as intermediate cities that are connected to large metropolises. On the contrary, according to Florida et al. (2020) the central areas of cities could be affected by the increase of teleworking and the reduced presence of companies. Another aspect we should refer to that may also have consequences for city centres is linked to the rise of online commerce, which is already a reality and may threaten high street shopping, leading to a readjustment of city centres as we know them. But they will also gain value from the encouragement of cycling and walking that I will address in this section.

When talking about changes in spatial uses we should also highlight that the leisure sector has been one of the hardest hit by the pandemic, and perhaps this will translate into less demand for leisure land until the "social scars" (Rodríguez-Pose, 2020) of this pandemic last. This, like other businesses hit by this crisis, may result in some empty



spaces in cities, which may represent a problem, but also opportunities for new projects, ideas and activities to come in and shape the post-pandemic city.

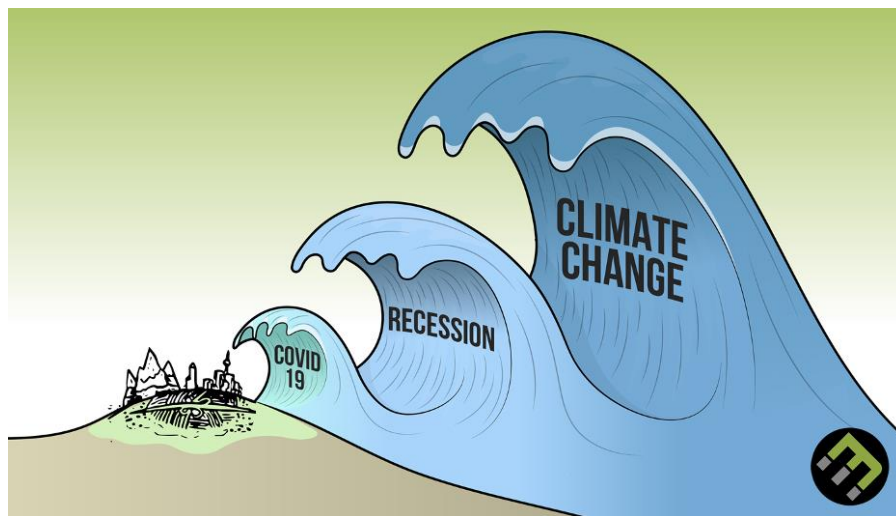
A society that is unlikely to consume and interact in space in the same way as before will require a somewhat different urban environment, which is why the decisions that shape public space will set the tone for what the future city will be like. It is normal that during this pandemic we have changed the way we use and perceive public space, especially in terms of social distancing, and this will mean two things. On the one hand, more use will be made of outdoor spaces for those activities where this is possible -for example, some concerts and ceremonies may take place in outdoor venues rather than in enclosed halls-. This will force cities to have adequate levels of green and open spaces where these demands can be met (Sharifi and Khaarian-Garmsir, 2020) while moving towards that greener, more sustainable city, and making life easier in future pandemics. On the other hand, urban designs will be developed to facilitate mitigation and response strategies, and to reduce the risk posed by the inevitable high densities in certain spaces, such as urban ventilation systems or redesigning the most crowded spaces and their entrances as much as possible.

In addition to social and spatial relations, the conditions of mobility occupy a very important space in this urban reinvention. The rise of remote working and distance learning presents an opportunity to "explore the importance of mobility in people's lives, the role of face-to-face contact at work, even the very idea of 'going to work'" (Rubin et al., 2020). In terms of mobility, these concepts combined with teleshopping, teleconsumption and tele-entertainment are completely transformative, as they "offer the possibility of reducing transport needs" (Iracheta, 2020). This logically implies a reduction in the volume of people commuting daily -reduction in the number of journeys/persons/day- and perhaps once this fact is established, and without forgetting the importance of the integral vision of this rethought city, it is necessary to take advantage of this potential reduction in energy consumption bearing in mind the climate crisis and the urgency of implementing a more sustainable and decarbonised urban mobility system.

But the pandemic has not only affected the quantity of mobility, it has also affected the way of travelling in the sense that many people will value options other than public transport for fear of sharing crowded spaces, and this will favour individual or family means of transport such as bicycles, but also cars and motorbikes, so it is urgent to encourage public transport by providing it with the means to be less crowded. Finally with regard to mobility it is also necessary to underline in relation to the advance towards the smart city that electromobility and, especially, "the new electric transit and micro-mobility" (Newman, 2020) should form part of the mobility of the post-COVID city as they are efficient, sustainable and avoid crowds, but for this to happen, urban designs should facilitate their proliferation -by means of, for example, increasing electric vehicle charging points or by implementing bike or electric scooter sharing systems-, and their prices must be affordable for city dwellers, because if only the wealthy can consume

these forms of mobility, the mobility of the city in general will not be able to move in the same direction.

Despite how badly many cities may have been hit during the pandemic it is also likely that all these changes in general terms "represent an excellent opportunity for planners (...) to promote transformative actions towards fairer, more resilient and sustainable cities" (Sharifi and Khaarian-Garmsir, 2020, p. 1). The great environmental impact of urban activities has been demonstrated once again during the most severe restrictions in cities, so we must not forget that the objective of urban centres is still to find a model oriented towards sustainability and to reduce inequality, but now it is also important to take into account the COVID variable and the new social, productive, spatial and consumption relations that it brings with it. This is why some initiatives to improve the city that fit in with this desired direction of cities are gaining sympathisers, such as the ideas of "tactical urbanism", "compact city" or the often talked about model of the 15-minute city where "the value of the local against globalisation is evident" (Mardones Fernández et al., 2020, p.663), as the main idea is to ensure that everything the citizen needs is within a 15-minute walk or bicycle ride from their home. In short, as Iracheta (2020) says, it is likely that in the medium to long term there will be a return to neighbourhood life "as long as the social facilities and public spaces required by each urban community are available" (p.19).



*Figure 3: The importance of keeping sustainability as a guideline for any development. Drawing obtained from EcoMatcher.*

### 2.3. Post-COVID university

In the case of the university world, something similar to the previous section is happening: before the outbreak of the pandemic, there was already a certain need to reconceptualise and reformulate the universities, and there was some concern in the academic world about the way they were drifting.

As before, we can begin by identifying the challenges these institutions were facing at the beginning of 2020, before the outbreak of the pandemic. For a sector of academia, some of the characteristics outlined in Section 2.1.2. that shape a model of university far removed from its origins, such as competitiveness, commodification and the need for constant production, are already on their own a compelling reason to rethink the direction of these institutions. And in part, I believe there is a great deal of truth in associating the main challenges of higher education with the behaviour of more global patterns. As Stanley (2020) explains in *Post Covid-19 University: Quo Vadis?*, there was already a dynamic of disruption in the university world before the pandemic, due to "accelerated technological innovation; concerns around sustainability (...); a borderless yet increasingly divided and fragmented world influenced by changing demographics; and a plethora of actors whose aims differ substantially from those which are currently assumed" (p.20). J. Selingo (2013) also thinks along these lines, who also locates the beginning of the intensification of this disruption in the crisis of 2008 and the consequent financial problems that affected the academic world, but without forgetting the important role of the rise of "disruptive alternatives" -referring, for example, to high quality online courses- in this rupture. Thus, a great parallel between the urban and the academic is that even before the pandemic there was a debate on how to re-idealise towards a more egalitarian, sustainable and efficient system without forgetting the new technologies and their increasingly important role. That is to say, on the one hand, one of the challenges is to prevent this gap -both in society and between universities- from widening, guaranteeing a sustainable future for education. It is because of this disruption that UNESCO, in its Position Paper on Education post 2015 (2014), outlines an educational roadmap where it emphasises aspects such as sustainability, social justice, inclusion and equality in education.

But on the other hand, we cannot fail to highlight the undeniable gradual digital transition that plays a central role in this issue. Education in general and universities in particular were in a gradual process of digitalisation, where little by little, in parallel with the emergence and innovation of new technologies, they were being added to the ways of teaching. It is undeniable that the future of education depends on the coexistence with new technologies and that the debate was about how to integrate them and how compatible they are with the traditional way of teaching, so we can summarise the point of debate in the question of how we can combine the growing and somehow necessary digital transformation with a more efficient and egalitarian university committed to sustainability and social justice.

Academic thinking in pre-COVID times saw online as something that has not come to change the world, something that far from its transformative essence was a mere



complement to the traditional face-to-face offer (Tesar, 2020), i.e. we were in a time of slow, uneven transition -maybe not everyone was equally prepared for this leap- and perhaps with a somewhat erroneous approach -the premise that technology is only a complement to traditional education, without substantial changes-. An example of this may be that many universities have spent millions to modernise university campuses - "equipping them with wireless technology, buying the latest computing power, hiring IT staff" (Selingo, 2013, p.72)- but without any real transformation or consideration of the power and consequences of online. The pre-COVID university world already posed certain limitations, of course, which is why some predicted -obviously without knowing how- that it "could not long resist the forces of technological change" (Idem.), and one among many limitations is that "online learning and teaching were not really intended" (Tesar, 2020, p.557).

The pandemic has shown that those who thought that new technologies had no reason to convert were not right, as the sphere of education, its dynamics and, therefore, what surrounds universities has been completely revolutionised. The goals of the future -i.e., introducing new technologies and more innovative teaching methods- "have become immediate needs with the COVID tsunami crashing in the global economy" (Blair and Lee, 2020, p. 45). For obvious reasons, universities became almost 100% online from one moment to the next, an unprecedented moment that forces us to make a leap that was not foreseen so soon. The fact that the digital transition went from being very gradual to suddenly arriving all at once has completely changed the immediate future forecasts of universities forcing them to adopt the necessary changes in order to not be left behind in a new reality that is far from what they have experienced up to now. This crisis is not just a bump in the road, but, having altered traditional functioning for a year and a half it has the potential to re-shape very key aspects (Banasiewicz, 2020). As with cities, many see this context of crisis as a unique opportunity where the university must reinvent itself to address -pending and current- challenges with a new approach and change some pre-pandemic dynamics. As Picker (2020) says<sup>4</sup>, this gives us "a second set of tools, an additional way of doing things".

Once we have moved to this scenario, it is impossible to re-interpret the university with the same eyes as before the pandemic, as it has become clear how powerful the ability to teach through technology is, that it can solve previous problems -such as simply being in two places at the same time-, and above all that it is quite possible in many universities today. E-learning is already an option to consider which requires less costs and fewer resources, "allowing more students to be enrolled on the online platform compared to the physical classroom" (Tesar, 2020). Recalling the business behaviour of many universities today invites us to think in a direction that is committed to a minimisation of face-to-face classes, with all that this entails.

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<sup>4</sup> Quote obtained from the Youtube channel of the University of Chicaco (29/04/2020). *COVID 2025: How an explosion in remote learning changes education - Randal Picker on COVID 19.*  
<https://www.youtube.com/watch?v=l1xtu-ZWLJs>

According to many researchers who have addressed this issue, the most likely scenario is that the first and most immediate changes will coincide with a period of economic recession due to the crisis itself caused by COVID-19 (Chicaíza, 2020; Donleavy, 2020). This would be very detrimental to the sector, meaning a decade of decline in universities -lower enrolments, under-supply, increased competitiveness, less financialisation...-. Of course, it should be noted that this will depend very much on the economic level of each university and how they are funded. Clearly, those with weaker sources of funding will suffer the most in order to survive and have the most urgency to reinvent themselves, and the rise of massive online courses which is already a reality is a serious threat, if not to the post-COVID university in general, then to these in particular.

But what changes might lie behind an increasingly less physical university? Today there are many uncertainties about the medium-term future of higher education, but with time after returning to normality and being able to analyse the responsiveness and dynamics of the new post-COVID university, we will be able to draw much more accurate conclusions. Even so, one thing that almost all academics agree on is that it has become clear that some aspects of universities have become obsolete and will tend to disappear little by little after the return to the classrooms. This is the example of lectures as a form of teaching, as "despite being a form widely used by universities, it was not fit for purpose for today's university" (Grant and Gedeon, 2020, p.19), as far from being the most efficient it can be quite ineffective. Instead, "videoconferencing will be a central element in the new strategy of many universities" (Remenyi, 2020, p.4) and as far as possible, small groups. Because of this, university buildings should be reorganised, just as activities requiring physical presence -such as laboratories or field work- will be reorganised (Idem.).



*Figure 4: Entrance of the Central Library at Radboud University, where the prohibition of crowds and the use of face masks are warned. Source: own.*

Of course, this reorganisation will depend on the type of university -some authors have already pointed to a greater disparity between different models of universities fulfilling different roles, and this is likely to increase the need for some to reformulate in order to ensure their future-, as the elite/research university, the mass university, or the local university, among others (Barber et al., 2013 classification) will require different strategies to adapt to the new university reality. Following this logic, disparities between universities are likely to continue to increase. In order to find out how to redesign universities in any of these cases, since the outbreak of the pandemic, a huge number of studies are being carried out to assess student preference and learning in order to improve this online system (Grant and Gedeon, 2020). This rise in digitalisation will also bring with it new challenges that the post-COVID university will have to face from a new perspective. One example can be, again, the issue of privacy -is it right to record or take screenshots of students' faces or the professor? (Picker, 2020)-.

Another aspect emphasised by many academics is the internationalisation of universities. Many universities were increasingly oriented towards targeting students from other countries by offering a high-quality research environment and services, and this was a key source of income for their economy, it seemed an inexhaustible source that relieved the economy of some universities by "subsidising and offsetting costs" (Tesar, 2020, p.558). A new system facilitating online learning could have consequences in this respect, indeed, according to The Economist Intelligence Unit (2020) this might already be translated into revenue losses. We should also bear in mind that behind the influx of international students there are other actors, such as student housing or other businesses that may be affected if this problem is confirmed, so here lies another of the big challenges that post-COVID universities will have to face. How will these universities remain attractive to international students?

In this situation where the remote seems to be the future, we cannot forget the importance of the campus itself in the university experience and the advantages of face-to-face education over screens. While it is true that no one is talking about a direct transformation to fully online but rather a hybrid model combining in-person and distance learning, it is also uncertain what will happen to campuses in the long term. Many universities have been committed in recent years to modernising and expanding campuses, but the leap to a less physical university has led many to believe that this trend will be regressive from now on. In terms of profitability, it may not be cost-effective in many cases to maintain a campus that is used less. Again, where possible, modifications will take place to remove the obsolete and adapt to the new reality (Haggans, 2020), and the challenge for many universities will be to try to keep it relevant to the university on offer. Linking this to the central theme of this thesis, Awofeso and Arida (2020, p.65), speak of the Smart campus as an extension of the Smart city where "the potentials of technology are unlocked to adapt the campus to the new needs of the people", as efficiency and sustainability in the overall infrastructure of the campus will be critical to its survival.

To ensure a successful transition from student to professional life, universities need to constantly update and avoid obsolete models. So even though a lot has been invested in the current system it is likely that, taking advantage of all these changes, a much deeper reinvention will soon come addressing issues such as, for example, the form of assessment and exams -how much you know better than how much you have learned- or the figure of the professor -no longer belonging to a single institution and thus reducing the concentration of elite professors in the most highly valued universities- (Ramenyi, 2020). Quoting Blair and Lee (2020, p.51), I believe that universities, taking advantage of this moment, have the possibility of "selecting a new future, identity and model, if they build a resilient, innovative organisation linked to the needs of students". The success of the post-pandemic university depends on the achievement of this complicated process, and on its good integration within the -rethought- city in which it is embedded.

### 3. CASE STUDY. RADBOUD UNIVERSITY IN POST-COVID NIJMEGEN

In order to draw more detailed conclusions from this study, I will focus on a specific case study: the case of Radboud University in the city of Nijmegen -The Netherlands-. This is a city that has been growing constantly for more than twenty years<sup>5</sup> and whose university facet, led by the prestigious Radboud University, has acquired great weight and recognition in recent decades. Because of this, it is common nowadays to see the city of Nijmegen associated with its university and even to see the city on lists of "university towns", i.e. cities whose university dimension has an important weight within them. Having put on the table the various possible changes that can take place in the way cities and universities function this inevitably leads us to ask a question: what will the impact of COVID on university cities be like?

#### 3.1. Impact on a University town

The figure of the university city is quite common in Europe and refers to those cities where the university population represents a large percentage of the total. When talking about the impact of the post-pandemic university in a reinvented city it is of special interest to pay attention to this type of city because the existence of the university has a strong influence on its economic and social life. In fact, many of the city's businesses are oriented to the university or to satisfy the needs of the academic population. It is precisely because of this, the great influence of the university's presence in other sectors of the city, that I am personally surprised that there are not too many publications on the impact that COVID can have in these cities, and that only a few have transferred their concern about the future of the universities to this area. With the expected boom in reliance on distance education and with the period of crisis and readjustment that many institutions will have to go through -and many will not be able to survive- the impact of the pandemic "will vary substantially in the localities where these institutions are located (...) with particular attention to the potential consequences for the local economies on which they rely heavily on higher education" (Sullivan, 2020). Cwick and Zeuske, in their article *Rettet die Unis und die Unistädte* (2020) -translation from German: "Let's save the universities and university towns"- point out how many businesses are suffering from the closure of universities during the pandemic and show their concern for the university and science towns which they describe as "endangered" by the pandemic, because after the declining university goes everything else. According to them, this could even, in the worst case, "endanger the EU's Lisbon Strategy of Europe as the world's most important knowledge-based area" (Cwick and Zeuske, 2020).

It is inevitable for many university cities to suffer in the coming years, especially in the most extreme cases where the university in question is forced to close or is unable to adapt to the needs of the new normality, but this will be far from the norm since the vast majority of university towns are backed by large and prestigious institutions with sufficient potential to reinvent themselves and with greater possibilities of funding,

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<sup>5</sup> Information obtained from the Allicijfers website. Link: <https://allecijfers.nl/gemeente/nijmegen/>

which makes it more possible to overcome a crisis. Therefore, university towns will not tend to disappear after the pandemic, but they will have a great need to reinvent themselves taking this factor into account -even more urgently than in large cities where universities are not essential at this level-. Therefore, the duty of post-COVID university cities right now is to try to remain an engaging destination for students, a city where the growing online possibilities are not an obstacle, but where it is still worth living there for other reasons. To strengthen itself in this way the on-campus offer that the university can provide is essential, so it is very important to build on the fact that the face-to-face experience at the university can offer more than just webinars and that it still makes sense to preserve some -clearly not all- features of the traditional university. This will require joint work in many cases between university city councils and their universities itself to move in the same direction with the same objective: to adapt to the new reality while remaining a relevant and attractive university destination.

### **3.2. Introduction to the case study**

Nijmegen, the city on which this study focuses, is a medium-sized city in the east of the Netherlands with a population of about 177,000 inhabitants<sup>6</sup>, a significant percentage of whom are university students. These are mainly linked to Radboud University, which this year registered 24104<sup>7</sup> students -but it should be noted that not all of them live in Nijmegen, and not all of those who do study in this city-. The number of university students in Nijmegen may be more than 40,000 if we also take into account the students of the HAN University of Applied Sciences -logically, only those of the Nijmegen branch- which gives us an idea of the university aspect of this city. The Netherlands is a country with a high density of universities and university towns and to some extent these universities were, at least until the outbreak of the pandemic, on an upward trend. This fact, together with the rise of less traditional universities of applied sciences -such as the HAN- is closely linked to the scenario of growing competition between universities explained in Section 2.1.2, which is why Radboud University saw the need to return to its specific scientific profile in order to differentiate itself and ensure a niche in the market (Ernste, 2007).

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<sup>6</sup> Central Agency of Statistics (CBS)

<sup>7</sup> Obtained from Radboud Annual Report 2020



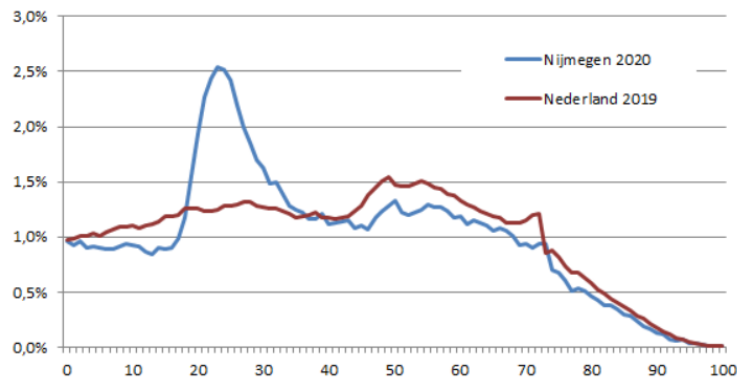


Figure 5: Age distribution of Nijmegen in relation to the Netherlands. Graphic obtained from the Municipal Bureau of Research and Statistics. Data: BRP and CBS

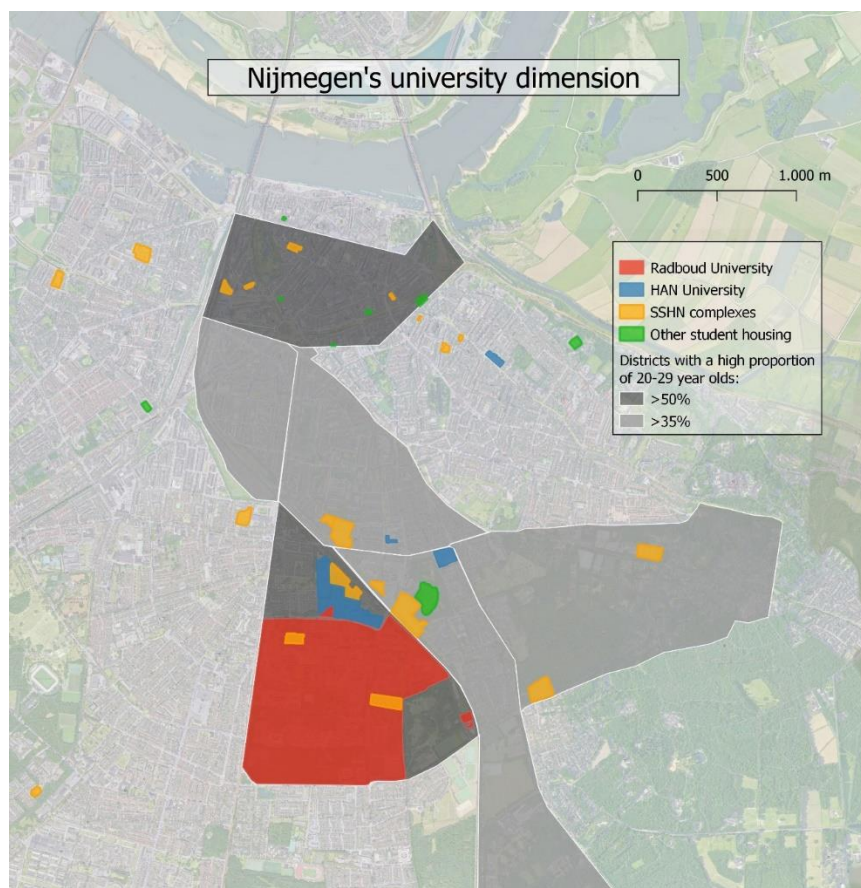


Figure 6: Source: elaborated by myself. Data obtained from the Municipal Bureau of Research and Statistics (Nijmegen.nl).

The university scene in pre-COVID Nijmegen is marked by a gradual increase in the number of students which of course affects other facets of the city as it means a greater demand for university-related activities and also related to an even greater weight of young people -e.g. more youth-oriented bars-. One of the most significant aspects of this is housing as the fact that there are so many thousands of students enrolled in

Nijmegen means that many of them will need to look for accommodation in the city. According to the Netherlands government's Personal Records Database (BDP) this affects 13% of Nijmegen's population, i.e. around 23,000 students are looking to live independently in the city, but this is not always possible due to limited accommodation resulting in great tension in the student housing market. As a result, every year some students have to move elsewhere outside the city which raises the question of how well the city is prepared and able to cope with the pace at which the university is advancing. However, walking around the city one can see the large number of buildings for student residences, being the main stakeholder SSH& who have been building student-focused residential complexes as the universities have grown to the point where there are now 25 complexes in Nijmegen. But the issue of student housing in Nijmegen goes far beyond SSH&, as according to Nijmegen's municipal office for research and statistics "the private room rental market has attracted attention in recent years, as an income model for small investors". Of the approximately 20,000 students living in Nijmegen independently, only about 6000 live in SSH& due to limited places, the rest in rented accommodation or other minority residences (Figure 7).

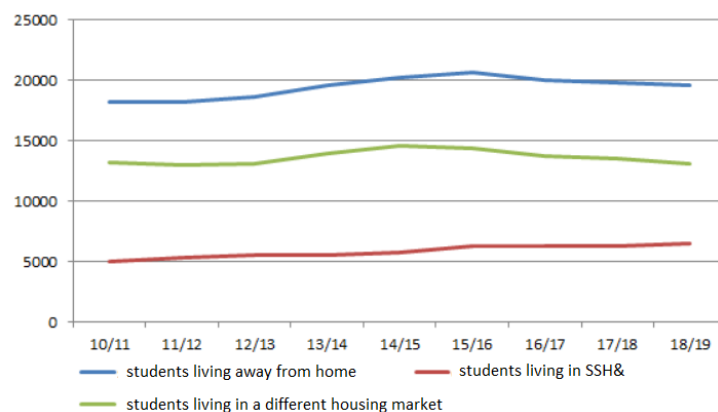


Figure 7: Graphic obtained from the Municipal Bureau of Research and Statistics.

An increasing proportion of these students are foreign students, and even before the outbreak of the pandemic, a significant increase was expected in the coming years -almost 6000 within 6 years-. This increasing internationalisation is not independent of a strategy of the university itself to build "a leading position in international academia" -quote from Radboud University's own website- where the university's network is being expanded -e.g. through the Radboud Summer School that is organised every summer-.

Despite this growing trend in the university dimension of Nijmegen so far, in 2019, the National Student Housing Monitor/Apollo (Landelijke Monitor Studentenhuisvesting) estimated a prediction for the academic year 2026/27 (Figure 8) where in Nijmegen the total number of students will decrease a little due to HBOs, while WO -research universities- will increase, which in the case of Nijmegen means a premonition of growth of Radboud University. This small and controlled decrease in the number of total students, far from posing a danger to the city, could give a break to the housing market that would make it easier for prospective students to find housing and could give the city room to improve in that and other respects. But nowadays it is not convenient to



hold on to forecasts made just before the pandemic, especially in university-related matters that are susceptible to many changes, so the question now is how will the emergence of COVID-19 affect the future of the university side of Nijmegen?

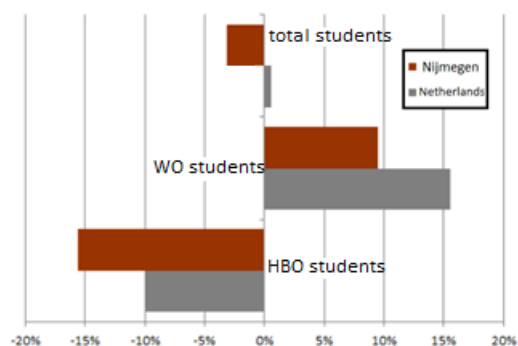


Figure 8: Expected percentage increase and decrease in the number of students between 2018/2019 and 2026/2027. Obtained from the Municipal Bureau of Research and Statistics.

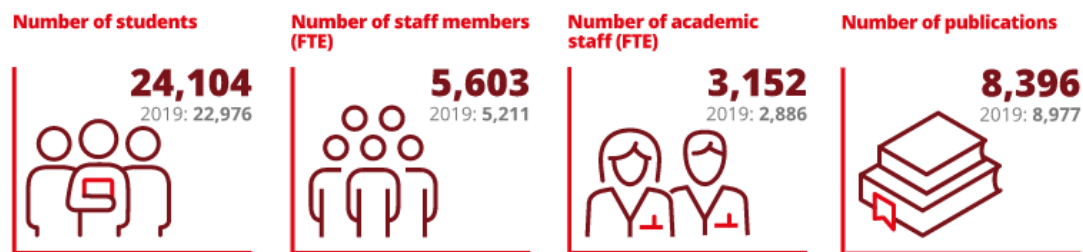
In many publications that have addressed the impacts of COVID in cities over the past year, many refer to the length of the pandemic period (Florida et al., 2020), -i.e. the duration of the phase where activities were taking place outside of normality- as a determining factor in diagnosing the extent of COVID. In the case of Nijmegen, since March 2020 when schools, restaurants, museums and events were ordered to close, the city has gone through different phases and levels of restrictions including the so-called "intelligent lockdown" -trying to keep the economic impact as low as possible-, a phase of reopening of businesses with many restrictions, curfews and limited schedules, again a total closure of non-essential businesses and from April 2021, as the vaccination progresses, a gradual return to normality still with restrictions on social distancing and numbers of people among others. As for Radboud, after the outbreak of the pandemic the courses went online, and although there was an intention for the 2020/2021 course to combine some face-to-face and online education, this was not entirely possible due to changes in the incidence of the virus during the course, so this course has been primarily online with the exception of some exams and tutorships. The next academic year will combine on-campus and online activities due to social distancing measures<sup>8</sup> but possibly, as we have seen in Section 2.3, many of these changes are here to stay, so it is likely that from next year onwards we will stop talking about the pandemic university and start talking about the post-pandemic university.

By this I mean that the duration of the pandemic period in this case is one and a half/two years. Fortunately, this is not a very long period so it is difficult for major systemic changes to occur, but it is long enough for some changes with significant consequences to persist. It is of great interest to know what these changes might be and what consequences they might have on the city because if we take the worst case scenario, it might worry the municipality of Nijmegen.

Before doing so, it is worth taking a quick look at the 2020/2021 academic year to see what the situation has been like. Obviously, as far as student housing is concerned, there

<sup>8</sup> Obtained from RU website. Link: <https://www.ru.nl/english/education/study-radboud/vm/campus-online-education/>

has been much less demand than usual, and for obvious reasons many businesses in the city have had to suffer, which is why the government has offered them some financial assistance to try to ensure their survival, and for the moment it is unknown which ones will manage to overcome this crisis. I assume that those related to nightlife -and, therefore, to the student community- will have a difficult time as, unlike other businesses that have been able to open with restrictions, these have remained closed for almost a year and a half. In the Annual Report provided by Radboud University we can see how the number of students has increased compared to last year but this increase in the number of enrolments does not correspond to an increase in the number of students living in the city which indicates that there is a certain group of students who have followed the course online and if it had been known that it would not be possible to carry out practically any face-to-face activity it is possible that this group would have been much larger.



*Figure 9: Radboud University data comparing the academic years 2019-20 and 2020-21. Obtained from the Annual Report of RU.*

In this context of fighting for a better position in the university market where Radboud wants to occupy a strategic place in the international space -proof of this is, for example, the increase in courses taught in English in recent years-, this normalisation of online could be an important step since by removing the, let's say, physical barriers -the fact of having to be on campus-, the possibilities of expanding in the market are multiplied. I don't think it is on Radboud University's agenda to take such a big step towards online, but it is true that this year they have proven that they have the tools to complete the course from a distance with satisfaction and that after this year we will move to a model where online is gradually being facilitated. If in the long term this trend becomes worse and therefore fewer students have the need to settle in Nijmegen we could be experiencing a problem in the university dimension of the city that would affect other businesses in the city that are oriented towards the student population.

In 2.3 I also talked about how campuses have to be reinvented to fit the new post-COVID university and how it is possible that in some cases in the long term they will tend to reduce in size. In the case of Radboud there is a large, green campus of just under 1 km<sup>2</sup> with very modern facilities and nearly new buildings in which much has been invested in recent years. Therefore, far from corresponding to the profile of a traditional university with preserved old buildings, it is likely that this university has many of the tools to readapt the campus and certain buildings. On the other hand, we should not fail to see Radboud University as integrated within a city of Nijmegen that will also undergo

changes -such as more outdoor activities, a vision of retrofitting with a focus on sustainability, or perhaps some changes in land use-. Along these lines, and imagining for a moment a campus that will be used less in the future, it is possible that in the long term the city and the university will come to some agreement to allocate campus space to other uses. Of course, by doing the interviews we will be able to get closer to a more realistic forecast rather than talking about assumptions.

Related to this vision of the university in the post-COVID city we must also refer to another aspect that I have mentioned in 2.2, that is mobility in the city. Nijmegen, like any city, will experience some changes in how much and how people move around. In terms of the university we are interested in looking at how students and teachers used to commute to the campus on a daily basis, and wondering what changes might take place and what the consequences of these changes will be. Logically, the ways of getting to the university are varied, and although there are some who commute by car or on foot -mainly those who live in residence buildings within or next to the campus-, the most predominant vehicle is the bicycle. In addition, I have not yet mentioned a fairly large group of Radboud users that is mostly composed of Dutch students who do not live in Nijmegen but in cities often nearby and frequently with their parents. They go to university mainly by public transport -especially by train, but also by bus- but in the post-pandemic scenario some may prefer to look for another alternative for fear of taking public transport. These students usually have the *OV-chipkaart* with which they can choose to travel free of charge on weekdays or weekends, mostly choosing the weekday option, but, in case they do not need to go to university daily from now on it might be more profitable for them to choose the other option. In this case, they are also likely to consider choosing a different means of transport, and those who live within cycling distance might cycle, but those who do not -the majority- might, as far as possible, consider the option of going by car -often the family car-. These assumptions also raise questions that will be addressed in the interviews such as to what extent a lower density of public transport users might alter their routes/frequency or how prepared the campus is for possible changes such as the number of car parks.

### **3.3. The economic dimension is essential**

Indeed, the university's financial aptitude is a determining factor in its capacity to respond and reinvent itself when facing this crisis. For this reason, it is worth looking at the financial part of the Annual Report to get an idea of how badly the coronavirus crisis has hit the university so far.

In it, they state that the impact has been negative by more than 8 million euros (Figure 10), excluding the average centre in Radboud) due to a lack of income in catering and sports facilities and an increase in leave -because there was less leave in 2020-. In addition, the university "reserved 0.45 % of the wage margin for incidental funding of bottlenecks due to COVID-19".

**COVID-19 in the year 2020 (excluding E&R Radboud university medical center)**

Amounts in €1,000

Lower results from sports facilities	-1,760
Lower results from catering	-1,371
Later filling of vacancies	709
Lower travel expenses due to travel restrictions	1,759
Contract extension due to COVID-19 delays	-886
Increase in leave liability	-2,084
Higher provision for projects	-1,470
Loss of rent/lower income	-1,361
Miscellaneous	-1,614
<b>Total effect of COVID-19 in the year 2020</b>	<b>-8,078</b>

Figure 10: Table obtained from the Annual Report of the Radboud University.

But on the other hand, they mention that other collateral aspects of this crisis such as under-utilisation of faculties or more government funding have been able to compensate some of this bad number. They describe their financial position as "strong and balanced" and in their financial report about coronavirus they state that the rigidity of their financial position will not endanger the future of the university, saying the following:

*"The university has assessed whether the developments in the coronavirus crisis after the balance sheet date had an impact on the continuity assumption. We concluded that there is an uncertainty, the extent of which cannot yet be estimated. However, given the expected developments in the liquidity position and the lump-sum government contributions, there is no material uncertainty about the continuity of the university as a whole. The negative effects of the pandemic are particularly pronounced at Radboud Services, where the turnover of the catering facilities largely disappeared. The faculties, on the other hand, had lower material costs (lower travel and accommodation costs) and personnel costs, partly due to not filling vacancies or filling them later" (p.105).*

This confirms that Radboud has the resources it needs to carry out a slow, medium to long-term transformation in line with the new post-pandemic reality.

### 3.4. Findings in the interviews

As already stated in the methodology section, a number of interviews have been conducted for this case study which will be transcribed in the appendices -again, in a volume which will be separate from this document-. In these interviews I asked different questions to stakeholders in Nijmegen and people who can give me valuable insights into different aspects of the university and the city in order to find out how the Radboud University will fit in Nijmegen in the post-pandemic reality. The way in which I will write this section will be explaining the concrete results I have obtained while introducing the most valuable information from each interview.

Throughout this thesis, different aspects of the post-pandemic reality have been addressed, so I think it is appropriate to divide this section into five different facets:

Firstly, a more general overview, where I will address broader aspects that are not covered in the following specific sections. Then, the issue of student housing in Nijmegen. Thirdly, on mobility and social distance. Fourthly, on the Radboud campus in the post-COVID university. And finally, on the student vision and the impact on the young facet of the city.

Name	Function	Date	Mean
Ilse Nieskens	<i>Senior Adviseur Economie and pandemic impact mitigation plans in the municipality of Nijmegen</i>	18/06/2021	Zoom
Tim Cools	<i>Housing policy advisor at SSH&amp;</i>	25/06/2021	Zoom
Menno Uphoff	<i>President and spokesperson of Student Union AKKU</i>	12/07/2021	Face to face
RU Housing team	<i>Housing team of the Radboud University</i>	18/06/2021	E-mail
Koen Fleuren	<i>Head of Campus Development at Radboud University</i>	08/06/2021	E-mail
Michael Haggans	<i>Retired university architect and founder of Campus Matters</i>	07/06/2021	Zoom
Jasper Meekes	<i>Senior Policy Advisor for Spatial Development and Mobility in Nijmegen</i>	13/07/2021	Teams
Henk Meurs	<i>Mobility and Spatial Development at RU</i>	No response	-
Harriet Tiemens	<i>Councillor for mobility in Nijmegen</i>	No response	-
Gert-Jan Hospers	<i>RU human geography professor interested in post-COVID city matters.</i>	Declined	-
Mark Groffen	<i>RU facility management teamleader</i>	No response	-

Figure 11: Table of the interviews I have conducted, including date and mean.

### 3.4.1. General vision

Before I get into any of the specific issues I will address, it is useful to take a more general, top-down look at what the future may hold for Nijmegen and Radboud University. To this end, I had a talk with someone who knows the situation very well from the inside, as she works in the municipality of Nijmegen as a policy advisor involved in the municipal plans to mitigate the impact of the pandemic. She is Ilse Nieskens and from within the municipality she is relatively optimistic about the impact of COVID on the city.



*Figure 12: May 2021. Illuminated screen located on the corner of Molenstraat and Ziekerstraat where keeping distance is reminded*

She confirms what I already said in the previous section: due to the (not so long) duration of the pandemic and the strong position from which both Nijmegen and Radboud are starting, there will be no major systemic changes, but certain things will change that are a priori symbolic but will have consequences. "We all want the improving changes to stay, and the things that worked better before the pandemic to come back," says Nieskens, and some examples of this may be keeping terraces at a safe distance or using more video meetings, which may also end up impacting the city.

In Section 2.2 I argued that one of the issues that cities may be concerned about is the impact on their shopping streets that will be threatened by the rise of online commerce. In Nijmegen, Nieskens asserts that there is no doubt that teleconsumption has experienced a very large growth during the pandemic and is likely to continue with the return to normality, and that this will mainly affect retail businesses. In addition, it is the businesses that already had problems before corona, especially referring to small shops and catering that may not survive this crisis, but according to the estimates made by the city council the figures are quite good because only 10% of the businesses have been



classified as being “with problems”. Therefore, it is unfortunately likely that the future of Nijmegen, especially in the inner city, will be less reliant on retail shops but this is far from causing a readjustment in the uses of space and therefore in the behaviour of the city as the vast majority of businesses will be able to survive this pandemic. After this summer, when businesses will no longer receive support from central government and will have to pay taxes as before, we will see how accurate these estimates are and will be able to get a more accurate idea of what post-COVID Nijmegen will look like.

The council recognises that there will be more opportunities to do things online from now on but they are not overly concerned that this will, hypothetically, result in a decline in the student population in the city. Firstly, because it is quite unlikely to happen, they believe there will always be enough students wanting to stay here. And secondly, a small decline in the student population, as long as it is controlled and not unbalancing, may not be bad news as every year there are many more students wanting to come than the city can accommodate. Of course, it is not the desired solution, but it might help some people and desaturate the housing market, for example.

In addition to allowing me to interview her, Nieskens did me the favour of contacting colleagues in the Municipal Executive of Nijmegen to send me a number of documents that might be useful for this study. These are four: an infographic on the economic effects of the coronavirus in Nijmegen, a letter from the council explaining the infographic, a document, also in economic terms, on the targets for 2025, and the action plan for the inner city.

In them, they set out the action programmes of the economic vision -*Actieprogramma van de Economische Visie*- and its 6 lines of action, and plans to boost the local economy, from the investment of 2.2 million euros, to a range of initiatives and projects. More related to the topic of this thesis they refer to the importance of the presence of universities for the recovery, placing the city in a good starting position as they provide the “high quality knowledge base, and a young and growing population with a creative streak”<sup>9</sup>, making them an important source of entrepreneurial power. Therefore, there is talk of greater collaboration between the universities -mainly Radboud- and the municipality from now on, in order for both to emerge stronger from this crisis. Examples of such initiatives that will involve Radboud are Mercator Launch -aimed at stimulating entrepreneurship on campus, facilitating the transition from ideas to business start-ups-, Radboud Innovation -actively reaching out to the business community to promote knowledge and facilities- or citymarketing projects to make Nijmegen's health and high-tech more visible. There is also mention that Nijmegen in the future in order to continue growing will have to distinguish itself from other surrounding technology hubs and stand out, which is reminiscent of that factor of competitiveness and creating your own brand that I mentioned in this thesis.

Broadly speaking, we can say that Nieskens emphasised two issues that I had already mentioned earlier in this thesis and which were also highlighted by several of the other

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<sup>9</sup> Municipality of Nijmegen (2021). Economic visie 2020-2025. Knooppunt van innovatie.



interviewees. On the one hand, she referred to the need of keeping Nijmegen an attractive city. Although the city council starts in a very strong position to face this crisis this is something that is very clear to them when making policies, because if the city has been growing for years it is precisely because it has a certain capacity of attraction, and the university is partially responsible of this. And on the other hand, I am referring to the idea of sustainability as a fundamental basis for carrying out any project whose aim is for Nijmegen to recover and grow, because first and foremost we must not forget that we must move in that direction. This is an idea that is becoming more and more accepted by the inhabitants, as the latest *StadsCentrum Monitor* survey has shown.

### **3.4.2. Student housing**

As we have seen, the unstoppable rise of online education is a key issue as we look to the years ahead. When we talk about its possible consequences in the city that hosts the university one of the main ones concerns all the facilities or businesses oriented to the student population, and among them, student housing stands out.

Focusing on the latter, for this study it is interesting to know the point of view of some of the main stakeholders in student housing in Nijmegen to find out if there is a concern about a more digital future and how they see the future in this field. The first thing I did was to contact the Housing Desk of the International Office of Radboud University who agreed to answer some questions, but by email.

In them, they indirectly mention the importance of the fact that the student housing market in Nijmegen is saturated when looking ahead, along the lines of what Nieskens already said. Thus, although it is true that there have been far fewer students coming to Nijmegen this year -specially internationals-, they have been able to help second- and third-year students to find housing, who are usually the ones who have it the least easy, and the overall number of empty rooms has not been as overwhelming as it may seem at first.

Meanwhile, the Housing Team does not believe that there will be a big leap to online, at least not in the next few years which is where they have their sights set on, as the university says it plans as much physical activity as possible. This digitalisation that I have referred to so much during the thesis is not something that is going to come immediately next year or even in the next few years. Rather, I am referring to a medium to long term -which could be several years- where the most striking consequences of entering into a new dynamic could take a few years to arrive. But they are not too concerned anyway, again referring to the saturation of the housing market, as a lower student intake in the future would be seen as a good way to continue to help second- and third-year students. They also emphasised that, despite everything, the number of international students in Nijmegen is expected to increase in the future and that more student housing will be needed to overcome this problem -again referring to the fact that the volume of students within the population of Nijmegen will not be affected too much-. The housing he is talking about should preferably be built on or near the campus, but this is a matter for many stakeholders such as the university, the municipality or private companies.

In parallel, I contacted RU professor Erwin van der Krabben -chair in Real Estate and location development- to whom I explained the purpose of this thesis and asked him for help in getting some contacts related to this housing issue, such as the real estate agent responsible for international student housing in Nijmegen. He kindly told me that it would be best to contact SSH&. Although he gave me the name of Moniek Derks-Schoofs, it was Tim Cools -political advisor of SSH&- who very nicely offered to have an interview with me on this issue and who provided me with a lot of information.

According to him, SSH& has thought about the effects of increased digitisation and they are concerned about it but perhaps it is too early to see clear effects. What he can say for sure is that this year a lot fewer -mainly international- students have come to Nijmegen, which means that many rooms have not been rented and many others have been rented out to Dutch students.

He agrees with the Housing Team that in the long term, following this trend towards the internationalisation of Radboud University, the number of students from abroad will increase and this is something that the university itself is counting on. In order to affirm that this trend will continue to increase he is certain that international students come not only for the education but also for the experience of living in another country or in another culture, so he does not believe that there will be a large reduction in the number of students coming to Nijmegen and that this could be a problem for the city. Something different and more difficult to predict, he says, is the case with Dutch students living with their parents and he believes that the group of Dutch students will not continue to grow, at least not at the same rate as that of international students. Therefore, although in the short term it is not impossible that there will be a small drop in the number of students, in the long term it does not look like there will be and therefore he does not think it will cause problems for the city.

This is why, despite the pandemic, they have not changed their ideas for expansion as they intend to build 1000 rooms within 10 years, which will mitigate the estimated shortage of 2000 dwellings, so according to SSH&, far from a problematic decline in student numbers housing problems will continue even several years after the pandemic.

Also important, Cools points out that he expects greater insecurity in unexpected developments after the Corona. This, on the one hand, requires more intelligent coordination and flexibility with the university -thinking, for example, of those who will want to stay at SSH&, but suddenly, for COVID-related reasons, decide to stay in their hometown-, and on the other hand, in the long term, has great significance for the construction of future buildings that will have to be more flexible. Thus, in case of unexpected demographic changes or if digitalisation results in fewer international students arriving than expected, more flexible student complexes could be repurposed, e.g. for conventional housing that can be used by another owner. This is something SSH& was already thinking about before this crisis, but now, given the uncertainties of the future, even more so.

Another more than possible consequence of the digitisation of universities that is related to housing and that Cools exposes is the following. As much as we may think that the internationalisation of the university will bring in more students from abroad it is undeniable that education is destined to become more and more online, that is a fact. Therefore, this means that students will spend some of the time they used to spend in class in their rooms and this begs the question of what kind of rooms and environments are ideal for this, especially when thinking about the housing that will be built in the future. This reflection reminds me very much of one that Iracheta makes in an article that I have quoted on occasion during this thesis: *La ciudad que quisiéramos después de COVID-19* (2020) -In English: The city we would like after COVID-19- where he talks about rethinking housing, its size and its characteristics by reconsidering the surface of the individual's vital space. Cools says that SSH& has seen an increased sense of loneliness and problems with socialising on the part of students and that they have a role to play in this by making it easier for them to meet each other. So they are looking at adding common rooms in some existing complexes -especially those that didn't have them- and this is something that will be taken into account in future complexes.

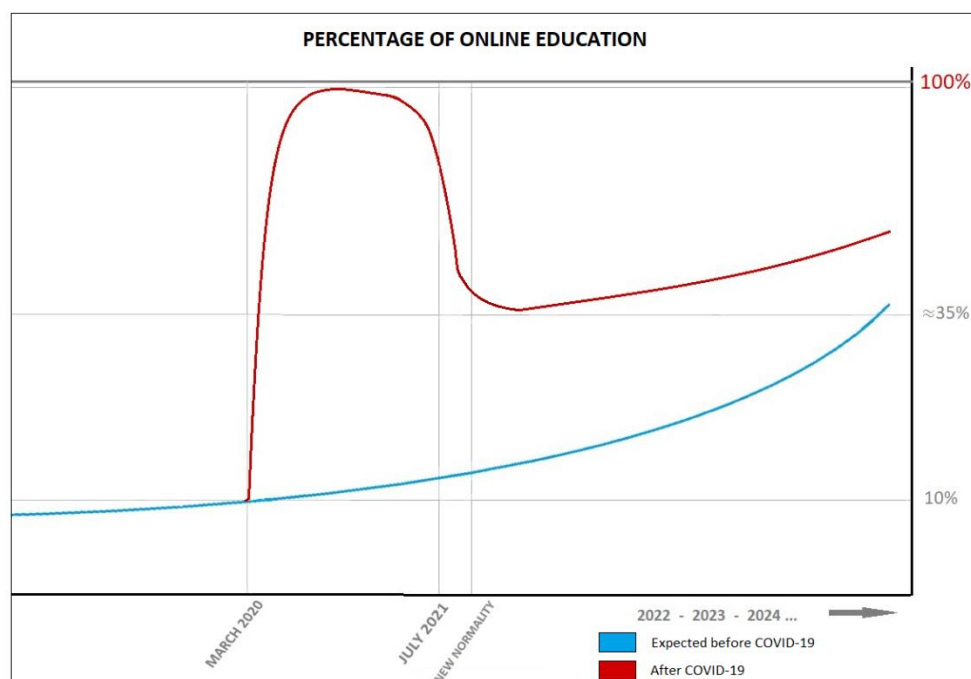
The green common areas surrounding many of its student complexes will also fulfil this function, so student life will be concentrated not only on campus, but also in these areas which is also linked to another very important issue that I have already mentioned but which was repeated by several interviewees: that of making the city a place that remains attractive to students in the post-COVID context. "Nijmegen must make sure that it has the necessary facilities, cafes, places to meet... and the green surroundings of our complexes can be a place to meet".

### **3.4.3. Campus**

Another important issue I have emphasised is the question of campuses in a university that is increasingly dependent on new technologies. In Section 2.3 we talked about the question of where campuses are heading imagining an increasingly less physical university, and we said that perhaps they could end up losing the importance they have today within the notion of university and that they will probably have to make changes to get rid of what we can describe as outdated after this crisis and adapt to the new reality and the future needs of universities. To learn more about the consequences for university campuses I contacted Michael Haggans, a university architect and campus planner who has long been involved in assessing the future of physical campuses in a digital world with several articles concerned with this issue. In addition, Haggans created the Campus Matters platform -campusmatters.net- where he discusses the importance of campuses in the face of impending digitalisation. Therefore, I believe that his vision of the future of campuses once the pandemic has broken out can be quite valuable for this work and I can corroborate this after having had a nice conversation with him.

He was convinced that everything, both urban and university-related, is always in constant transformation, and he foresees behind the COVID a scenario of great changes, as the physical barrier in education -together with the limitations it implies- that was about to be broken a few years ago has been completely broken with the pandemic. To

capture this accelerating factor mentioned above, he quickly drew a picture -recreated in the Figure 13- in which he foresees an increase in online university education. This move towards an increasingly hybrid model of education will, he states, have consequences for campuses since on the one hand it will mean that there will be fewer traditional students what means that the campus will be less frequented, and on the other hand obsolete or unnecessary forms of teaching will disappear. As I have already mentioned on some occasions during this thesis, knowing the duration in which our behaviours are necessarily modified -the length of the pandemic- is a key factor in knowing its impact, and according to him these 18 months or so in which both students and teachers have modified their attitudes and experiences is enough time to expose what was obsolete and guarantee substantial changes in the post-COVID university and that affect their campuses.



*Figure 13: Recreation of the graphic sketched during the interview, drawn by me.*

But what exact changes are we talking about? Above all, Haggans emphasises on those forms of teaching, such as lectures or conferences, which from a teaching point of view have become obsolete and which it is logical that they will disappear from campuses and move to the online sphere. There is no longer a need for them on campuses and they often take up extensive space in large on-campus buildings that will have to be repurposed for other activities that do fit into the university of the future. Those who have the financial capacity to transform the campus in this direction will do so and this will eventually lead to a difference between the wealthier and better funded universities and those that will be less able or unable to adapt to this change. Broadly speaking, there will be a change in the way campuses were managed. In the last decades it was normal to see many universities investing a lot of money in campuses, in improving, enlarging and modernising them, giving the impression that they were ignoring the consequences that the imminent digitalisation process could have on campuses, but it is logical that

after this crisis this will begin to change, as the leap to online in which we are already situated will be analysed more seriously.

At first glance, the Radboud campus is not an exception as in recent years it has presented a more modernised face of the university with new buildings such as Elinor Ostrom (2018) or Maria Montessori (2021) among others, but after talking to Koen Fleuren - head of Campus Development at Radboud University- one realises that these new buildings do not exactly take Radboud away from the university of the future, although it is also true that they will need adaptations.

Fleuren's vision is essential to this results section because it focuses on the specific case of the Radboud campus. To begin with, by saying that they are "working on a new vision of education and will adapt their facilities from Campus Development accordingly", he is confirming the "revolutionary" component of this crisis that is full of changes and in a way confirms this small step of transition towards the online that we have already mentioned, saying that "the staff will work from home a couple of days a week, even when it is not necessary because of COVID". In this line as for the readaptation of some buildings he assures that the facilities will facilitate this mixed or hybrid education in the future. This, according to him, can be achieved by making work environments more flexible, sharing facilities and devoting more space to formal or informal meetings. As we have been saying, he confirms that there is likely to be a reduction in large classrooms of more than 150 students as that form of teaching is destined to be online.

To both Fleuren and Haggans I asked whether these adaptations towards a future where the campus is less used may in the long run result in a reduction of the size of the campus, bearing in mind that maintaining areas of the campus that are not entirely necessary can be a waste of money for many institutions that are very much concerned with economic profitability and even more so in times of crisis. In asking this question I was thinking especially of Nijmegen as a city that is growing physically, expanding into the suburbs, where perhaps there may be other actors interested in making more use of space in this part of the city such as residential housing, for example. To this, Fleuren responds that "there will also be a slight reduction in m<sup>2</sup>, but more importantly, we will facilitate the planned growth within the current areas". Haggans also believes that in the long term this could be a consequence, and furthermore he links this issue to a topic that I have also mentioned a lot in this study and which I have also asked them about: sustainability as a key aspect in the reinvention after the pandemic. Campus downsizing could play a key piece in the puzzle of campus decarbonisation, and it is very important that campuses pioneer this because they are a mirror for cities to look into.

"Good campuses are among the largest desirable objects on the planet because they have a single ownership, they are designed knowing limits, they know what they own and they meter how much energy they use (...) they must reduce their carbon footprint to zero as fast as they can and when they do so they will demonstrate how this can be done for more complex series of uses such as housing, food or industrial activities." (Michael Haggans).

For Fleuren, in addition, being sustainable is necessary to be successful in the future, as people want to work and be close to environments where sustainability is taken seriously. He says it is important for the campus to be green and sustainable and we can see how at the Radboud campus this was already very much in mind before the pandemic. Even in the presentation of new buildings such as the Maria Montessori building (May 2021), we can see how energy sustainability and the reduction of energy consumption are of great importance<sup>10</sup>.

Having a sustainable campus is, according to Fleuren, very important for attracting talent, but apart from that, keeping the campus attractive is an essential task for Radboud University from now on because, based on research, he says that the undeniable growth of online does not mean less need to meet in person but on the contrary and presence on campus will be more valuable. This is where the main idea of both converges, in that the campus must be something that matters, that attracts students and prevents it from being relegated to the background. Fleuren makes an interesting point when he says that this requires a campus with life and Tim Cools joins this reflection who, on behalf of SSH&, tells us that to achieve this, this year they have built the new Nestor building on campus in addition to the existing Sterrenbosch building. This reminds me of a study in an article by Amir Hajrasouliha (2016) where he explains the benefits of having student housing on campus.

To conclude, I was informed by Campus Development Radboud that a campus adaptation plan is in progress and is expected to be ready this summer.

#### **3.4.4. Mobility**

I have also talked about the possible changes in mobility after the pandemic, something that will surely affect cities in general and their connection with their universities in particular. The expected increase in working, educational and consumer activities from home, together with possible changes in the use of transport, will leave us with a very different mobility scenario than before the pandemic. Of course, Radboud users are no exception to this, and this should be taken into account by the university and the municipality.

Although I have contacted an expert who works directly with mobility in Nijmegen to discuss this issue, this topic also came up spontaneously in the interview with Nieskens, who said that we will be dealing with a new mobility stream as an effect of this crisis. On the one hand we will have fewer people commuting to work or school, but on the other hand she sees a greater flow of delivery drivers possible due to the rise of online commerce, something that can already be seen in the city. It is still too early to tell exactly what post-pandemic mobility will look like in Nijmegen, but what is clear is that there will be changes.

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<sup>10</sup> Opening Maria Montessoriegebouw in 3 minuten. Available at: <https://www.youtube.com/watch?v=qAhBuZaY51k>

My main idea was to contact Henk Meurs, Radboud professor of mobility and spatial development, but finally I could not reach him by email or phone. At the same time, I wanted to propose an interview with Harriet Tiemens, councillor for mobility in Nijmegen, but she did not answer me either so I forwarded the proposal to Petra Slink, board secretary. Very kindly Klaas Pruijsen from the Bureau of Research and Statistics answered me and wanted to help me by sending some quarterly monitors produced by the municipality with a lot of mobility data recorded since the beginning of the pandemic in Nijmegen. He also gave me the contact details of Mr. Bram Verhoef, from the same bureau, whom I did not hesitate to contact. He again referred me to the mobility information from the monitors and sent me a dashboard with data on pedestrian numbers per week in the centre of Nijmegen. I am very grateful to both Verhoef and Pruijsen for the time they spent in trying to help me, but due to my intention to collect information qualitatively, through interviews, I have decided not to make use of the information they sent me.

Finally, I was given the contact of Jasper Meekes, senior policy advisor for spatial development and mobility in Nijmegen, who quickly answered me and agreed to set up an interview where I could ask him my questions.

To talk about the effects of COVID on mobility in Nijmegen, we first have to be clear about two things. First, that the objective for which the municipality is moving forward is to achieve a transport system that fulfils three characteristics. These are more active, more sustainable and more space efficient mobility -e.g. walking bikes, public transport...-. And second is that Nijmegen as a city is growing, and it is important to make space for the coming people to move around, therefore emphasizing the first point.

That said, the COVID crisis, according to Meekes, will bring both risks and opportunities for further progress in this direction. Risks include the possibility that people may not trust public transport that much. This was particularly the case during the pandemic and has resulted in financial losses for transport companies, mostly covered by central government. But as I mentioned with the Nijmegen businesses there will come a time when the government will no longer take care of it and then we will see more drastic consequences. Perhaps people will continue to be a bit reluctant to use public transport because of sharing space with other people, and to cope with these losses it is likely that companies will only be able to offer less frequent transport, which will make them more crowded, the quality of the service will decrease and we will enter a spiral where public transport will go into decline.

But in terms of opportunities, on the one hand, the mere fact that people commute less provides many opportunities in freeing up some of the space that Nijmegen needs. On the other hand, the fact that people will hypothetically commute only 2 or 3 times a week due to the rise of teleworking and distance education makes it more likely that they will experience behaviour changes and that they will choose other means of transport in favour of public transport or cycling. In other words, the fact that people will commute less helps the municipality to move in the desired direction which is why



they are asking companies to maintain teleworking to a certain extent or to avoid rush hours as much as possible.

Another opportunity that the consequences of COVID may bring is related to an aspect I already mentioned in Section 2.2, and that is the possible rise of electro-mobility. According to Meeskes, on the one hand, e-bikes, which were already booming, will continue to grow and the municipality is also promoting cargo bikes -which can be substitutes for cars in some cases- and especially shared mobility, as they meet the 3 requirements mentioned above, and they are likely to gain popularity in this new form of mobility. But on the other hand, Meeskes is very doubtful of other electric means of transport that are far from fulfilling these 3 objectives such as electric cars -which still take up space and are not entirely sustainable- or electric scooters -which end up replacing walking or cycling- so this is not the direction Nijmegen wants to take, and he does not see the future going that way.

However, regarding the university context, he attaches great importance to the fact that a door has now been opened to a slightly more online education which could grow over time. Both Radboud University and the Radboud Medical Centre plan to keep a small part of their activity online even after the pandemic either by keeping online courses or some treatment via video meetings. This can have very significant effects especially when it comes to the *Duurzaam Bareikbaar Heyendaal* initiative.

This project, which can be translated as Sustainable Accessible Heyendaal, was initiated shortly before COVID and involves many actors such as university institutions, transport companies and governments, and aims to make adjustments to campus mobility to make it a more sustainable and accessible place. For example, in order to flatten congested peak hours, the start times of the different institutions on campus have been changed so that they do not coincide in time. But the part that is of most interest to this study is the *Autoluwe Groene Campus* initiative, whereby car traffic is to be cut off on the campus by closing Heyendaalseweg and Erasmuslaan -as shown in Figure 14-, significantly altering the connection of the campus to the city. Back to the crux of the matter, to avoid this causing more traffic in the surrounding area which would be counterproductive, car traffic urgently needs to be reduced by 20% compared to 2019 and the consequences of the university moving slightly to the online dimension may make a difference in this respect. Therefore, although Meeskes says he values face-to-face education, he does not deny that from the municipality's point of view a possible reduction of traffic to the university is to be welcomed. In the same direction, this project also includes improvements in the train line -towards electrification and increased track- which in the future will result in a higher frequency of public transport and that will also help them to achieve this goal.

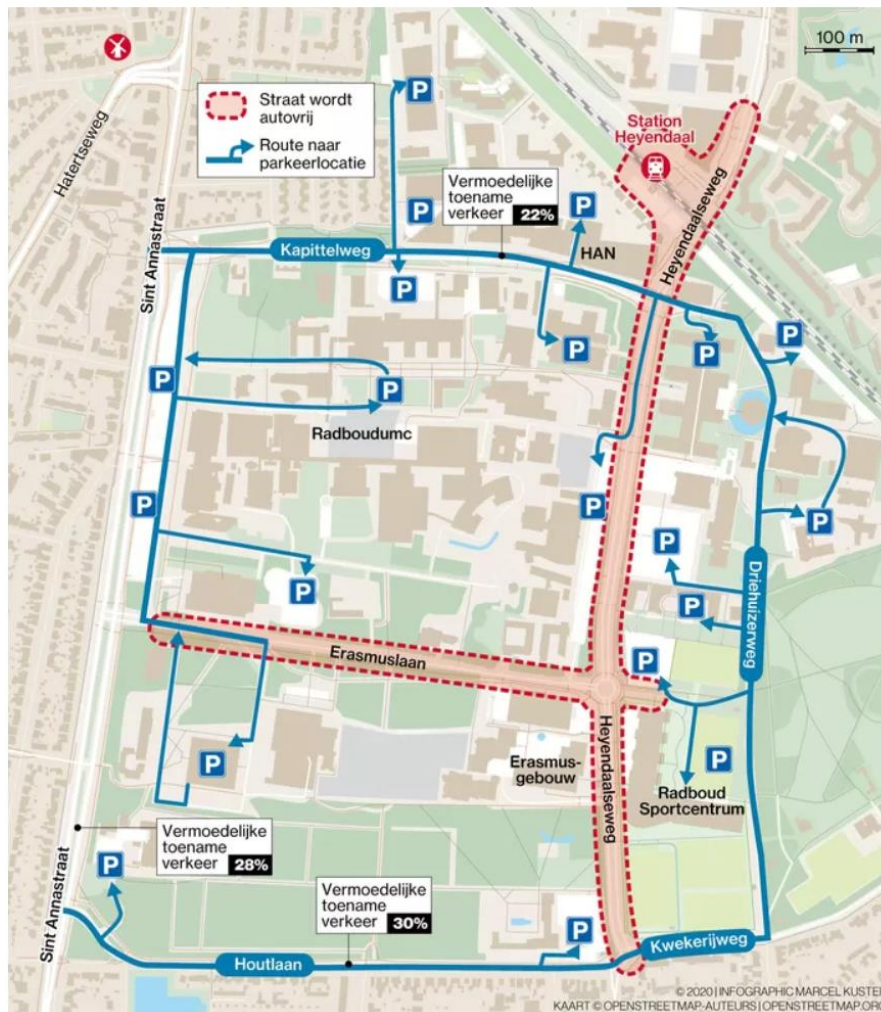


Figure 14: Map of the project *Duurzaam Bareikbaar Heijendaal*. Obtained from the digital version of *De Gelderlander*. Link: <https://www.gelderlander.nl/nijmegen/extra-drukke-door-autovrije-campus-nijmegen-in-veel-straten-wordt-het-juist-rustiger~af1ee86a/>

In addition, taking advantage of the fact that he also works on spatial development matters I asked him about the issue of the much-mentioned social distance during the pandemic and the possibilities of this generating changes in the future. Several months ago, in the midst of the pandemic, many people made reference to the consequences of the forced maintenance of this safety distance on the way we use and understand public space. This could therefore lead to further changes in the way we construct public space and relate to each other in cities. But, perhaps because the duration of the toughest restrictions has not been as long as we might have thought months ago, the feeling we have today is that this idea is somewhat exaggerated. Meeskens thinks along these lines as it is not at all something that is being taken into account in future projects he is working on, and he foresees that the use of space will be quite similar to pre-COVID times. However, he believes that there will be small changes that can be limited to aspects that I have already mentioned such as the fact that many terraces continue to

occupy public space even after the pandemic, or changes in spatial uses such as the location of offices.

### **3.4.5. The role of students**

When dealing with a topic so closely related to the human side of universities we cannot forget the vision that students have. That is why I contacted Menno Uphoff, president and spokesperson of the student union AKKU, which on its own website claims to "represent the interests of students in Nijmegen"<sup>11</sup>. Unlike the other interviewees I was able to meet him in person and have a nice conversation about the position of Radboud students towards a more digitalised university in the future and what worries them about this drift in Nijmegen.

At AKKU they are very aware of what this abnormal period of time of a year and a half may mean for the future, as they agree that it is logical to start a path with more online presence from now on. Although this may have positive aspects -for example, having the classes recorded, which is an advantage- the student community values face-to-face education and what is linked to it much more, such as the possibility of seeing and interacting more with the teacher, leaving your room for a while, seeing other students, etc. Uphoff emphasises the fact that it is probably easier for universities to do things online and therefore to a certain extent there will be a conflict of interests, as it is precisely the role of students not to let this digitalisation get out of control of the universities.

Therefore, it is very important that the universities take into account the opinion of the students as a fundamental part in this matter. In relation to this, another important thing is that AKKU is not the only group representing students in Nijmegen, and this is a good thing as it gives a greater plurality to their interests. Although they do not have any "official" role in which they are systematically asked about certain issues, these associations make their voices heard in front of the municipality or the university when measures that go against what the students think are implemented. So, if the general feeling of the students in the future is to increase physical education, there are many stakeholders who should push in that direction.

The conversation led us to end up talking about how the global context that I introduced at the beginning of this thesis has a strong influence on the future of universities and therefore on their behaviour in the city. Since he is an agent who is relatively close to both university and city managers, I asked him whether, from his point of view, this crisis has a reformist identity, or whether, on the contrary, it is pronouncing that tendency which I referred to as "neo-liberal". Clarifying that it is at all times personal and not on behalf of the student union he is a little pessimistic about the consequences that this crisis may have in the future on the way universities function. While he is aware that it is much more efficient and cost-effective to invest in online options, he worries that the

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<sup>11</sup> From <https://studentenvakbondakku.nl/en/what-is-akku/>

next step could be an uncontrolled boom of remote university. This, as well as being against the interests of students in general, could end up degrading the quality of the university "understanding future university as a sort of YouTube. I think university education is way more than listening to a lecture in the background while you are doing something else". Although there is a certain danger or threat that mass digitisation will be the way universities opt for in the future to make things more efficient, he insists that this experience of moving online for a while has also brought many good things that will remain, and that for the moment it is enough to be aware that this drift exists.

On the other hand, I asked all the interviewees about the question I raised earlier about whether the COVID crisis may end up affecting the university identity of a university city like Nijmegen.



*Figure 15: May 2021. Picture of Koningsplein. A banner reminds of the safety distance together with the slogan "Old city, young vibe" and a link to a page of events in the city focused on young people.*

From municipality, Nieskens doesn't think that this crisis could affect the university facet because there will always be enough students wanting to come to Nijmegen. There would have to be some very unexpected negative conditions for this to happen. This is why she believes that in order to remain attractive and for students to decide to continue coming even though they have the online option, the municipality must continue in this direction. The post-pandemic action lines in the documents sent to me by the municipality also have a lot to do with how to continue to make Nijmegen an

attractive city through talent attraction, innovation, and sustainability. It also mentions a joint line of work with Radboud University.

Uphoff is of the same opinion as Nieskens, who says that, as long as the online aspect is not taken to an extreme level, Nijmegen should only be concerned with remaining Nijmegen, as it is a very attractive city for students. Fleuren, from Campus Development, also believes that although there might be a risk -or even students might come for less time as they could hypothetically do part of the course online- he does not think that the academic aspect of Nijmegen is in danger and students will continue to come, because studying is more than just following classes -it is also about growing as a person and meeting new people-. As for SSH&'s view on this aspect, I have already mentioned how they believe that this internationalisation of Radboud will lead to more students coming from abroad in spite of COVID, so they don't see the university dimension of the city being endangered either. However, they are also aware of the uncertainties that COVID brings with it and that there is still a certain lack of knowledge about post-pandemic reactions, so again, both Nijmegen in general and SSH& in particular have the duty to remain attractive to students.

I also asked the same question to Haggans who, despite being American, I tried to put him in the context of Nijmegen. His answer was also along the same lines: in order not to lose the identity of a university city all its institutions must make themselves attractive to make the university a place worth experiencing in person. And this will have to be done with great dedication and caution, because in this transition period there will be those who fail to do so.

Thus, while they think it is unlikely that a less physical university in Nijmegen will result in a noticeable loss in student numbers, all interviewees emphasise one key issue for the university side of the city not to be in risk and thus harm the city: the city an attractive destination that is worth living in for students.



#### 4. CONCLUSION

Although it is still difficult to know what the real consequences of this crisis will be and how the city will function in a few years, through this thesis we can come to a number of conclusions about the role of Radboud in Nijmegen in a post-pandemic future.

Firstly, based on the idea that a very specific global context sets the direction in which the world moves I have identified a number of logical alterations that we can foresee in both post-COVID cities and universities. The main ones are shown in Figure 16, and in this way we can get an idea of the main aspects in which they will differ from those of a few months ago.

Having understood this, which is fundamental in order to approach the objective of this crisis, I have looked at the specific case of a university town such as Nijmegen, the city that is home to Radboud University, in order to get closer to knowing the extent of the changes identified above and therefore to find out how this much-changed university will fit into a city that has also changed. To this end, after paying special attention to different areas that relate the university sphere to the urban sphere, I have obtained a series of results.

Perhaps most importantly, Nijmegen and Radboud start from a good position to cope with this crisis, so they have the potential to adapt to the required changes and because of this we are not talking about a big conundrum to try to survive. In other cities an unbalanced recovery between the city and the university could lead to problems, such as a large loss of the student population or a collapse in the city's infrastructure if the city is unable to keep pace with the university. This is certainly not the case in Nijmegen.

The main change is that after a year and a half of mainly distance learning this has opened the door to new ways of understanding the university that will gradually become more online and will, of course, affect the way the university relates to the city. On the one hand, this will make Radboud students -as well as the general population- commute less, which will have a major impact on the mobility of the city. Furthermore, the fact that students are likely to commute less days per week has an effect on behavioural changes, so mobility will not only be affected by how much you commute but also by how you commute.

Although there will be obstacles to overcome in the return to normality, such as a possible decline of crowded public transport in favour of the private car, overall the COVID crisis provides a unique opportunity to facilitate more sustainable mobility not only in environmental terms but also in the sense of being compatible with a growing city. This, in the university environment, is reflected in the *Duurzaam Bareikbaar Heijendaal* project, which requires less traffic to become operational, and it seems that the consequences of this crisis will help to make this happen. This will ultimately make the university environment more sustainable and accessible from the city itself.

	Where were they heading?	What can we expect after this crisis?
CITIES	<ul style="list-style-type: none"> <li>Planetary urbanism (large urban agglomerations)</li> <li>Entrepreneurialism (the idea of being a brand that can generate more revenue)</li> <li>Territorial competitiveness (between and within cities)</li> <li>Urban fragmentation</li> <li>Privatisation and commodification</li> </ul> <p>Challenges: To come up with a sustainable city model in socio-economic and environmental terms.</p>	<ul style="list-style-type: none"> <li>Economic impact (sometimes greater inequality/social vulnerability)</li> <li>Increased technologisation of our daily lives</li> <li>Urban designs that promote social distance</li> <li>Changes in spatial uses (less commercial high streets, companies moving from CBD's to peri-urban areas)</li> <li>Empty spaces (opportunities)</li> <li>More use of outdoor spaces (need for more open and green areas)</li> <li>Changes in urban layout to avoid large congestion</li> <li>Less journeys/person/day</li> <li>Adjustments in means of transport</li> </ul> <p>Challenges: Finding new dimensions and perspectives from which to address the previous challenges, taking into account the COVID variable and even taking advance of its effects.</p>
UNIVERSITIES	<ul style="list-style-type: none"> <li>Gradual digitalisation</li> <li>Market-oriented alignment</li> <li>Entrepreneurship</li> <li>Third-party funding</li> <li>Unbalanced growth (between universities and their branches)</li> <li>Competition between universities (battle for excellence)</li> <li>Large investments to expand and modernise their campuses</li> </ul> <p>Challenges: Combining the growing digital transformation with a more egalitarian, sustainable and efficient university.</p>	<ul style="list-style-type: none"> <li>Economic impact (some will not survive)</li> <li>A much more technologised university (taking much more advantage of online alternatives)</li> <li>More internationalised universities (and more able to enrol more non-attendance students)</li> <li>But with less physical presence of internationals</li> <li>Greater difference between universities that can adapt and those that can't</li> <li>Lectures and conferences will move to the online sphere</li> <li>Readaptation of campuses (reorganisation of buildings, end of enlargement, more technologised)</li> <li>University cities will suffer from these consequences (many student-oriented facilities and businesses).</li> </ul> <p>Challenges: to rethink key aspects in order to decide on a future, identity and model compatible with the characteristics of a more digital university.</p>

Figure 16. Table of conclusions I. Summarising the conclusions of Section 2.

But in this scenario where university digitalisation will have an increasing weight, the very notion of the campus as a mere urban space occupied by the university is also likely to change. University campuses are a part of the university that will be greatly affected by the rise of online, as it is where all the face-to-face activity takes place, which will become less important. This is why, although the future of campuses is still uncertain, it is clear that Radboud campus will need to reinvent itself in line with the new forms of



teaching of the future. These readaptations will be both of the campus itself -making it worth visiting, remaining a meeting place, with more living space...-, and of its own buildings -sharing facilities, reducing large classes, more space for meetings...-.

On the other hand, it is quite significant whether a future more online university will result in fewer students coming to Nijmegen, which would of course be detrimental to the city. But the actors interviewed do not see this as very likely to happen partly because of the international expansion process Radboud is undergoing which will continue to attract students. This is a matter for all stakeholders, so all Nijmegen, the Radboud Campus Development, student-oriented companies (like SSH&) and the students themselves are aware that it is crucial to remain attractive to students in order for this not to happen.

This is why in the case of Nijmegen the university aspect of the city itself does not seem to be endangered as it might be in other university cities. Since what is linked to the university goes far beyond the campus and spreads all over the city, this is of special importance for all facilities in Nijmegen oriented towards the student population. Although it is likely that a small part of them, especially those that were not doing well before the crisis, will not survive to it, the expected arrival of more international students in the future will make it possible for this important source of income in Nijmegen to be maintained. A significant case is that of student housing which despite the crisis is still planning its necessary expansion but which, as in all fields, will now have to take into account the COVID variable -like more flexibility in their buildings due to unexpected events, or houses designed to spend more time studying-.

Thus, the main conclusions I have drawn from this research are as follows:

- The duration of this pandemic, i.e. the time in which our behaviours have been inevitably altered, is completely sufficient for some substantial changes with significant consequences to take place in both Nijmegen and Radboud. However, despite the reinventing potential of this crisis and the opportunity it provides to focus on finding new and more sustainable models, the circumstances do not favour radical structural changes in the short term, but rather adaptations with a new approach in mind. Logically, the two spheres of study will continue to be driven by those neoliberal values I mentioned at the beginning such as competitiveness or entrepreneurialism, which will be noticeable when taking advantage of these new scenarios.
- Although a slight and controlled shift towards digitalisation of Radboud would facilitate the solution of some problems or challenges facing Nijmegen, such as mobility, an abrupt and uncontrolled shift, however cost-effective it might be, would be detrimental both to the students -who value face-to-face teaching the most-, and to the city itself -which could suffer a great loss of income-, as well as to the quality and prestige of Radboud -as the university cannot be reduced entirely to online courses-.
- Although it is too early to know 100% what the consequences of the post-COVID Radboud will be in terms of the number of incoming students in Nijmegen, it is

very unlikely -unless there is an unexpected radical change- that the university side of Nijmegen will be affected. Although a slight reduction in the number of residential students in the short term would not be a major problem due to the current shortage of facilities for so many students -such as student housing-, stakeholders are working to remain attractive. To this end, and due to the strong dependency between Nijmegen and Radboud, further cooperation between the two is necessary, especially in such a changing crisis. The desire to implement various mutually beneficial initiatives is good news in this respect.

- All stakeholders who play a role in the integration of Radboud into the city are aware that sustainability is a fundamental basis for looking to the future and even for making Nijmegen a more attractive place. By following the lines of action of these actors, we hope that the post-COVID scenario in which Radboud and Nijmegen relate to each other will be more sustainable and in line with the growth of the city itself.
- Thus, in the post-pandemic era Radboud will make Nijmegen a more internationalised city, it will contribute to a more sustainable and fluid city in terms of mobility, where there will continue to be a strong importance of the university facet and which will not only be evident on the campus, readapted and used in a different way, but also in the surroundings of the student housing.

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