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Towards degrowth housing development? Lessons from a scenario-based gaming session in the Oslo region

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ABSTRACT

This article focuses on the potentials and barriers to the realisation of a degrowth scenario in housing development in the Oslo region. The point of departure is a previously designed radical degrowth scenario, which depicts a future housing development that is both environmentally sustainable and socially just. Through a gaming session with housing stakeholders in the Oslo region, I investigated the elements hindering or facilitating the degrowth scenario. This paper analyses the results of the gaming session using morphogenetic theory, theory of political economy of environmental sustainability and critical urban theory. The results of the gaming session reveal important structural hindrances to the scenario within the current housing model, which directly depends on the socio-economic structures of capitalism. The article promotes a debate concerning housing for degrowth and a reflection on the deep socio-economic conditions for degrowth transformation.

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KEYWORDS

Degrowth; housing development; sustainability; scenario; serious gaming

1. Introduction

With the point of departure of a previously designed degrowth housing scenario in the Oslo region of Norway (Mete and Xue 2020), this paper asks which potentials and barriers exist within the current socio-economic-political settings to achieving the scenario. The degrowth scenario depicts a future housing development that, through reduction in average per capita housing consumption and a strong redistributive strategy, can contribute to both the environmental and social sustainability of housing for current and future generations. As an essential degrowth strategy, a reduction in housing consumption per capita has been argued to be important to respect the environmental limits (Mete and Xue 2020). This means that redistribution mechanisms from those possessing large shares of the housing stock to those possessing less should be established to secure everyone's access to housing within a limited housing stock. Degrowth is defined as a "voluntary, smooth and equitable transition to a regime of lower production and consumption" (Schneider, Kallis, and Martinez-Alier 2010). It opposes the unplanned negative growth happening within a pre-existing growth regime (Schneider, Kallis, and Martinez-Alier 2010). The goal of degrowth is environmental sustainability and social sustainability: they are both reached by respecting the planetary boundaries and promoting a good quality life for all.

Conversely, ecological modernisation is the theoretical background of the so-called green growth strategy. It considers economic growth a lever for increasing sustainability (Gunnarsson-Östling and Höjer 2011), and it is a technological optimistic theory, meaning that, according to its tenets, technological advancement can always decouple the impacts of the increased growth and consumption.

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This paper focuses mainly on the housing sector. The degrowth scenario, which will be scrutinised in the gaming session (Section 5), opposes the mainstream economic paradigm for the housing sector: growth-based housing development and the neoliberal housing model. As underlined by Nelson (2018), although with contextual differences, growth-based housing development is the mainstream paradigm for housing in affluent countries. Growth-based housing developments include capitalist forms of production, consumption and distribution of dwellings. Especially, considering the neoliberal traits, housing presents the typical financialisation aspects: housing has become a tradable good, following the markets rule and increasing the speculation tendencies (Jackson and Senker 2011), which put housing accessibility and affordability for all at risk.

Considering these three ideal types – degrowth, ecological modernisation and growth-based housing development, the degrowth scenario offers a radical alternative to growth-based housing development and to the prevalent green growth agenda for sustainable housing development (Nelson 2018).

The radicality of the degrowth scenario implies that reaching this future can meet various challenges. In this study, the degrowth housing scenario is given as a desirable future. The aim is, therefore, to identify socio-economic-political barriers and potentials for achieving such a degrowth housing future. The study is original in its attempt to include many practitioners in identifying the favourable and unfavourable conditions for materialising a degrowth housing future in an affluent Western city – Oslo. Thus, the study contributes to moving from a degrowth imagination to the exploration of possibilities for its realisation.

Distinct from the existing housing degrowth studies that have reflected mostly on measures specific to individual housing projects such as eco-housing or co-housing (Schneider et al. 2013; Ferreri 2018), this study points to the urban regional level and inquires macro-scale structures that can enable or block the change. Thus, this study identifies barriers and potentials both within the housing sector itself and in the current structural conditions at the societal level.

The investigation of barriers and potentials was conducted through a participatory backcasting approach (Robinson 2003) based on a gaming session, which is rather innovative in the study of housing field. Professionals and stakeholders in Oslo's planning and housing sector were involved in a backcasting gaming session, which aimed to gather knowledge on barriers to and enablers of a degrowth housing future.

Thereupon, the empirical analysis of hindrances and potentials has been informed by the metatheoretical grounds for social change through structure and agency interaction, the theory of the political economy of capitalism and critical urban theory. This study acknowledges the metatheoretical grounds for social change through the dynamics between structure and agency (Archer 2013; Danermark, Ekström, and Karlsson 2019).

The rest of the paper is structured as follows: After the introduction, a methodology section (Section 2) follows. The theoretical perspectives informing the discussions on the findings of the gaming session are presented in Section 3. Section 4 introduces the general features of the housing sector and the relevant housing policies in Norway and the Oslo region. Based on the gaming session, Section 5 presents societal conditions for the materialisation of the degrowth housing scenario, as identified and articulated by the game participants. Section 6 endeavours to interpret the findings from the gaming session following theoretical arguments. Finally, the conclusions (Section 7) follows, where the study makes a preliminary attempt at suggesting steps towards a degrowth housing future.

2. Research design and methods

2.1. Scenario and backcasting

As mentioned above, the starting point of this study is a pre-designed degrowth scenario that ensures a just and sustainable housing sector for the future (Meté and Xue 2020). The space here does not allow a thorough depiction of the scenario, except a simplified reiteration. The core of

this scenario is a reduction in consumption of per capita residential square metres and eco-tech measures to ensure environmentally sustainable development of the housing sector. The scenario covers the Oslo region (including the Oslo municipality and the metropolitan municipalities). In particular, the scenario shows that reducing the square metre per capita consumption from the present figure of 50.5 to 44.2 m² would promote an important decrease in residential energy consumption. Such a limitation would nullify the need for additional housing, even with the anticipated increased population of the Oslo region by ~284,000 inhabitants within the next 15 years (SSB 2019). Nullifying additions to the housing stock means reduction in the total energy consumption and decreased impacts normally produced by the provision of raw material, construction, land consumption and travel impacts resulting from new settlements. Such measures are combined in the scenario with energy efficiency improvements in existing buildings, which makes them even more efficacious than the present path regarding the reduction of total energy residential consumption. Still, the important aspects of social justice need to be addressed. A degrowth scenario, with a reduction in square metre per capita consumption, also means heightening the risk for overcrowded dwellings and inadequate housing solutions. Therefore, a just redistribution was a core element in the scenario building: considering the remodelling of bigger units and the reduction of the overcrowding in others.

Scenario building is a method from the field of “futures studies”. The developed degrowth housing scenario belongs to the type of normative scenarios that depicts a desirable future that cannot be achieved by following the current trajectory and within the existing conditional frameworks (Börjeson et al. 2006). Associated with normative scenarios is the backcasting technique, which, according to Robinson (2003), can be used to explore the feasibility of reaching desired end-points. With this technique, it is possible to start from an endpoint (in this case, the degrowth future) of a normatively defined future and investigate the steps that might be required or those conditions that might hinder the realisation of the desired future situation. Backcasting can be conducted by purely theoretical exploration (Wangel 2011) or in a participatory manner with societal actors.

In this article, I will employ the backcasting approach to identify barriers and potentials towards the degrowth scenario in the housing sector in the Oslo region. The backcasting is developed by synergising theory and participation: empirical data is collected through a serious gaming session (see Section 2.2 below) in a participatory manner, followed by an analysis using theoretical lenses (see Section 3).

2.2. The serious game in this study

Serious gaming is meant to do more than entertain the participants (Michael and Chen 2005). It is often explicitly used to educate or investigate and has a vast application nowadays, including urban planning and development studies (Poplin 2012; Heinonen et al. 2017). There are diverse forms of serious games. In this study, the gaming session was based on the causal layered analysis (CLA) gaming method. CLA gaming is a multi-layered and integrative technique for serious gaming (Inayatullah 2004; Heinonen et al. 2017). The method addresses issues within four layers: litany, systemic causes, worldviews and metaphors. Litany refers to the trends and the factual aspects of the story, in this case, the scenario. Systemic causes focus on the causal logic and the factors underpinning the scenario. They are grouped in a PESTEC table, which is an acronym for the aspects it synthesises: political, economic, social, technological, ecological-planning and cultural aspects. The participants in the gaming session fill in the table. The worldviews layer refers to the view given by the agents in the game, a roleplay with allies and enemies. The metaphors, at last, include the illustrations and perceptions of the scenario for each agent.

The version of the CLA game used in this gaming session was adjusted to the number of participants, time and researchers available. The gaming session focused on the first two layers, litany and systemic causes. A reflection on the worldview and the role of the agents was done by the

researcher in the analysis phase, which followed the gaming session. CLA guided me to prepare a pre-constructed serious gaming meeting and structured the gaming process. The analysis (Section 5) is built on but does not strictly follow the layers of the game because the CLA technique is not an analytical tool, but it is a guide to prepare a serious gaming session. As a method, it does not require its use to further analyse the results of the game, but it only speaks to what happened in the session. Therefore, the analysis (Section 5) followed a specific method, expounded in Section 2.3, namely a theoretical interpretation via structure/agency, and existing body of social theories.

In the gaming session, a group of 10 experts in the field of housing sector and planning in the Oslo region were invited (Figures 1 and 2), including architects, urban planners, real estate developers, public administrators and a researcher. The participants were divided into two groups: each group needed to have one representative from each area of expertise. In the gaming session, they learnt about the scenario, reflected in groups and identified hindering and enabling factors for the scenario. The game was conducted in the following steps:

First, both groups were given instructions on how to participate in the gaming session, and each participant was given an imaginary page of a fictitious future newspaper, which gave them information and data on the degrowth housing scenario (Figure 3). The newspaper (Figure 3) represents the first phase of the CLA gaming: the litany phase. The newspaper is a fictitious description of the situation in Oslo regarding a degrowth scenario. It is the scenario itself told in a narrative and more visual form. I prepared the newspaper ahead of the gaming session to summarise the effects of the degrowth scenario on the housing sector and the city region. It is written in Norwegian and touches upon aspects of the sustainability of the city, mobility, the redistribution policies of the housing sector and the implied planning transformations.

Second, the participants started interacting freely with one another in their groups after they became acquainted with the future scenario via the newspaper. The second step aimed to enable the game players identify the blocking and enabling present conditions to achieve the designed future. The participants played their own professional role. Each group was given a synthesis table to be filled in agreement. The table chosen follows the PESTEC method (Heinonen et al. 2017) used in other experiments to explore the elements derived from different spheres. Under each theme, the participants identified the enabling and blocking conditions of a degrowth housing future in the Oslo area (Figure 3).

Third, each group presented its table, triggering further discussions and new inputs. The analysis considered the PESTEC tables, the conversations and the plenary presentations. I acted only as a moderator in the game since I was not directly involved in the discussions in groups or in the plenary moment.



Figure 1. Participants in the gaming session. Source: author.

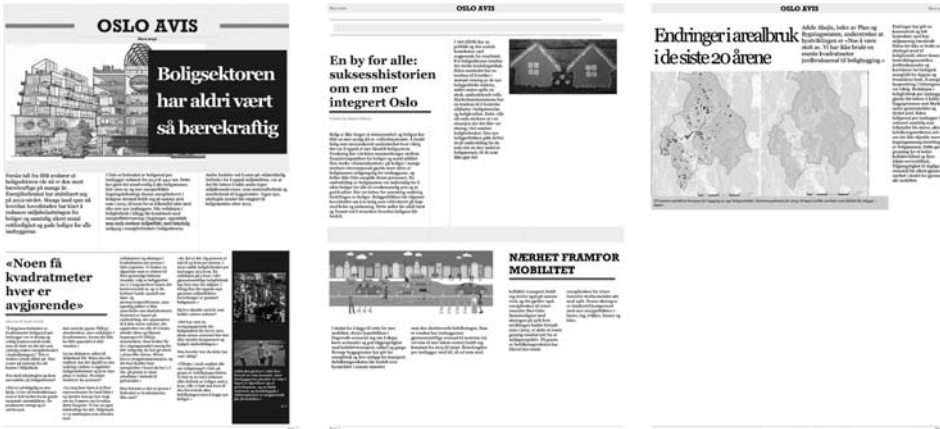


Figure 2. Newspaper of the future. Source: author.

2.3. Analysis method of the game

The game was video-recorded and the conversations in the two groups were later transcribed. This material and the PESTEC tables form the basis of the follow-up analysis and discussion. The findings of the analysis are summarised in Table 1.

First, through the analysis of the transcriptions, the claims and arguments were sorted out according to the categories of structure and agency. In the table, the conditions blocking or enabling the realisation of the degrowth scenario for the housing sector of Oslo, were also sorted out according to

	ENABLING CONDITIONS	BLOCKING CONDITIONS
POLITICAL	<ul style="list-style-type: none"> - idea of capitalism - restrictions of needs - totalitarian society - less individualistic 	<ul style="list-style-type: none"> - focus on capitalism, consumption, growth - too much freedom
ECONOMIC	<ul style="list-style-type: none"> - high taxes on sq. m - reimbursement - taxes on extra houses - bad economy 	<ul style="list-style-type: none"> - abolish Airbnb - boflekt - banking, finance, construction industries are dependent on housing growth
SOCIAL	<ul style="list-style-type: none"> - social movement supporting moving out - community, closeness - fewer children - old people - out of the city 	
TECHNOLOGICAL	<ul style="list-style-type: none"> - remodeling the houses 	
ECOLOGICAL-PLANNING	<ul style="list-style-type: none"> - access to green/public space - cohousing 	
CULTURAL	<ul style="list-style-type: none"> - status - making cool living in small homes - lagom 	<ul style="list-style-type: none"> - pets - hytter - desecration of apartments - status

Figure 3. Example of PESTEC table filled by participants. Source: author.



Table 1. Analysis of the results of the gaming session with barriers and enablers to the degrowth scenario, under structure and agency.

		Structure (paraphrased)					Agency (excerpts from the transcriptions)			
Barriers	Systemic	Political	Socio-economic	Technological	Built Environment	Culture	Planner	Private Developer	Researcher	Public Administration
	-Complicated regulation processes	-Local autonomy in the decision process leads to unwanted consequences (e.g. sprawl)	-Tax system per today	-Very expensive to be innovative, especially in the housing sector	-Rigid housing stock (not easy to re-modulate)	-Professionals and authorities are not used to think and solve social problems	-"Norwegian planners are not ready for this quick urbanization"	"We are very dependent on political discussions"		"Municipalities lack power in meeting the developers"
	-Lack of comprehensive measures and decisions	-Capitalist-driven logic						"But we do have a culture for it (ownership)"		"There is a systemic aspect, you cannot expect to sell housing on an app."
	-Lack of political cohesion and will		-People struggle to accept too progressive changes					"Do people really want a sustainable consumption?"		"Too many conflicts.. Often we deal with a chessboard with 100 squares, namely 100 owners"
			-The State subsidises housing ownership					"What's in it for me?"		"You must discipline owner interests, they must be whipped, if not, you need money! You must have whip, money, and planning!"
	-Lack of a "deadline" political mindset		-Subsidies to districts but not cities							
	-Lack of funds in the local administrations		-Lack of a top-bottom leadership model, as in Communism							
	-Current planning instruments inadequate and weak (e.g. VPOR)		-Lack of adequate financial systems for a different future							

Housing	-Lack of a right to housing law	-Current Tek standards, too stricts and still not adequate to renovation of old housing stock	-Fear of heights in housing	-Culture of property -Very hard to consider housing consumption as an answer to the problem"	-Can we build new, or do we have to readapt? Sometimes it works but often not ..."	-Much is about how we think about it, also with psychology in mind"
	-Lack of appropriate and dedicated tenants protection regulations	-Too much speculation and too much money in the housing sector (financialisation of the sector)	-Lack of adequate green/blue infrastructures	-We took the pines with us in the cities, and we want it private and with the tuja hedges ..."		
Enablers	-Presence per today of quite ecologically aware progressive political parties	-Reinvestment of oil funds for the good of society (from oil fund to redistribution fund)		-Individual environmental awareness-social status (a changed status: more green, more social network appealing)	-Densification strategy is good to create the critical mass"	-It is possible to consider alternatives to the State initiatives"
		-Changed role of banks and financial authorities		-The next generation will be doing it, they are far more global and green"	-It is important that you also have the carrot ... if it is too radical ... (it won't work)"	
		-Crisis offer an opportunity to change				
		-Financial tools in housing (e.g. shareholder)				

(Continued)



Table 1. Continued.

		Structure (paraphrased)					Agency (excerpts from the transcriptions)			
	Political	Socio-economic	Technological	Built Environment	Culture	Planner	Private Developer	Researcher	Administration	Public
Housing	-State incentives for green innovation	-Household composition (e.g. bigger families and collective solutions) -Cooperatives (e.g. OBOS) have started to understand they have to do something since people cannot afford moving in the new apartments -Presence of the borettslag concept and cooperatives	- Technological innovation in housing and tech efficiency on the rise	-Exclusive housing cooperative	-Housing as a service, not an object	-“A diversified housing offer is important”				
	-Existing housing instruments (e.g. boplikt) and lessons from the past			-Enhanced housing quality	-Millennials and sharing culture	-“The big Oslo developers could join their forces and make this happen maybe? Instead of the State or municipalities ...”				
					-Ethical and moral awakening-					
					Norway is becoming more and more urban					

the remarks of the participants. Section 6, shows the interpretation of the results shown in the PESTEC table using the political economy and critical urban theories.

3. Theoretical background

3.1. Structure and agency in societal transformation

Achieving a degrowth scenario is about social transformation and change. This requires deep insight into structural conditions for the possibility of change. To gain such an insight, social change has to be understood first at a metatheoretical level where the dynamics between agency, structure and change are inquired. In particular, the study is based on an acknowledgement of the dualism of structure and agency as two connected, albeit separated, phenomena (Archer 2013). Agents refer to the actors involved, whereas structures refer to relations among social positions occupied by the agents, such as power, competition, dependence, and also economic structures that define positions and relations. Structure is presently in existence for the agent, conditioning agents' actions (Danermark, Ekström, and Karlsson 2019). The acting of the agents can maintain, modify and perpetuate a status. This understanding of how humans and agents operate and under which structural and cultural circumstances is pivotal to this study, as it provides a foundation for interpreting the enabling and blocking conditions of the degrowth housing scenario.

Discussing structure and agency is also increasingly emphasised by scholars applying a backcasting approach. Backcasting techniques have often been used in studies on sustainable development, targeting very complex future questions that call for major changes (Wangel 2011). Theorists have acknowledged the need to include social structure and agency when discussing "far-reaching societal changes" (Wangel 2011, 873). Excluding structure and agency in the backcasting study risks maintaining the status quo, which can eventually obstruct change.

The results of the game were interpreted exploring some theories. On one side, political economy theory was used to explain the present dominant capitalist economic structures and their relationships with social and environmental sustainability. I also used critical urban theory as a key to recognising urban problems related to political economic aspects. The theoretical reflections will be integral parts of the discussion of the findings of the gaming section (cf. Section 6).

3.2. Political economy of environmental and social sustainability

The political economic theory provides a critical angle to understand how the capitalist system functions and how it could positively or negatively affect realising the degrowth scenario in most affluent countries. The current political-economic system is based on growth premises. Growth and capital accumulation are the engines and the main traits of capitalist economies and housing systems (Marcuse 2012).

Several critics have argued that capitalism is a barrier to long-term environmental sustainability. Capitalism and growth tenets promote a model that requires increased production and consumption, which impact the environment. In particular, as Foster (2011) underlined, the economy has grown to a level exceeding several planetary boundaries (climate change and biodiversity as examples), and the environmental impacts have become increasingly visible. Also, several critics have argued that the capitalist system by itself cannot provide a sustainable future (Naess 2006; Foster 2002; Kovel 2007). There are several reasons for this, which can be expounded through three central topics: pursue profit, consumerism and growth.

The market economy includes two important aspects: marketisation and growth. Both are reproduced and enhanced by competition. Increased marketisation is due to pressure from investors who demand minimised social control on the markets, while growth is linked to the process of pursuit of profit through increased efficiency (Fotopoulos 2007). Growth relies on efficiency in the division of labour and in specialisation towards a continuous maximisation of profit. The maximisation of

efficiency guided by the pursuit of profit and capital accumulation could impede the realisation of the degrowth scenario, especially for increasing labour efficiency, which is often employed to increase production in the capitalist system. If an increase in labour efficiency is utilised to shorten working hours, it will properly parallel the degrowth paradigm. Therefore, efficiency per se is not necessarily in contrast with degrowth, especially if it is related to technological efficiency, eco-efficiency or, more in general, reduction of costs or working days. Theoretically, the deepest barrier to degrowth is the entrenched growth imperative and its associated culture (e.g. consumerism, private ownership), regimes (e.g. deregulation of private sectors, housing as a commodity) and activities (e.g. speculation). In Section 4, in the game analysis, these aspects will be made explicit.

Degrowth implies a major social change to turn the economy towards the opposite of growth (Latouche 2003), with a voluntary reduction of the GDP (Gross Domestic Product). As underlined by Foster (2011), this could not happen easily in today's capitalist economy because the latter is based on the concrete concept of capital accumulation, which contradicts the de-growth idea. Also, keeping capitalism in a degrowth scenario would require numerous regulations to tame the tendencies of the capitalist economy (Foster 2007). Many regulations contradict a capitalist system, especially in its neoliberal form, and will likely face fierce opposition from the capitalists and their organisations' interest. Degrowth therefore needs to address the barrier created by the current capitalist system and the growth-based model, under which the housing sector functions today.

3.3. Critical urban theory

Regarding housing development, critical urban theory, given its focus on urban problems, provides interesting insights that parallel the above-mentioned perspective of political economy. Brenner, Marcuse, and Mayer (2012) underlined that cities are the main arena of economic accumulation. Harvey (2010, 314) stated that "urbanism founded on exploitation is a legacy of history". Despite the crisis tendencies and instabilities, capitalist urban development remains mainstream. Regarding critical urban theory, environmental degradation and human suffering are considered consequences of the urban crisis caused by the contradictions of capitalism (Harvey 2014). According to Brenner, Marcuse, and Mayer (2012), the urban space serves as the arena, the medium and the stake for the struggles created by capitalism. Under capitalism, the urban space is the "point of collision" where the benefits of the few (linked to capital accumulation and growth) collide with the needs of the discontented and deprived (Harvey 2010).

Reaching equity and social justice under current conditions appears difficult. Let us consider that a just city would present three pillars: equitable distribution of housing, diversity and democracy (Fainstein 2014). Achieving an equitable distribution would encounter multiple barriers associated with the main characteristics of the current housing model: commodification of housing, limited involvement of governments in restricting private profits and idea of ownership (Marcuse 2012).

These aspects will be discussed in Section 5. Nevertheless, it is possible to anticipate that some of the features mentioned by Marcuse (2012) could be countered with specific measures, as in the case of ownership. Davis (2006) suggested adding varying forms of tenure besides the classic rental and ownership. Also, Marcuse (2012) also suggested a shift towards the vision of housing as a social good. The containments of the housing market traits would certainly benefit the environment and the society. The analysis of the gaming session would distinguish between the housing traits and the more systemic aspects using political economic and critical urban theories.

4. The context: housing development and policies in the Oslo region

As the largest Norwegian metropolitan area, the Oslo region is attractive for newcomers and businesses. It presents a relatively stable trend of economic growth, which reflects the housing

sector, with an 815% increase in the values of the building stock from 1992 to 2017 (SSB 2018). Furthermore, housing consumption is boosted by governmental policies aimed at stabilising the interest rates on housing loans or offering tax deductions from savings accounts for mortgage deposit. The high costs of housing in Oslo are partially caused by relatively easy access to mortgages and a low-level unemployment.

The most common form of tenure in Oslo and Norway remains homeownership. Neither the rental sector nor social housing is diffused. In particular, social housing in Norway accounts for only 5% of the entire housing stock (Andersson et al. 2010). Social housing refers to the provision of housing by municipalities to help groups struggling with entering the housing market or unable to access the private rental sector for economic or personal reasons. This low share of social housing makes Norway exceptional among the Nordic countries, and it is rooted in the history of housing provision itself. Before the liberalisation of the housing sector in the 1980s, the provision of affordable housing was fulfilled by co-operatives (OBOS, USBL, etc.), which have built the largest housing estates in Oslo and provided access to housing to many workers and citizens. The units were sold at an affordable price to the inhabitants, enabling them to access homeownership (Stamsø 2009). Other schemes, such as housing loans provided by the Norwegian State Housing Bank, also supported the self-construction of single housing units. Other regulative and financial mechanisms were established to control both the price and rent before the liberalisation wave of the 1980s (Stamsø 2009).

After the housing sector liberalisation, the above-mentioned co-operatives remained active and continued to develop housing projects. However, they operate as private sector actors and develop housing with market prices while keeping certain co-operative features, such as membership access. The public sector provides for social housing only for severe housing deprivation issues due to financial or other personal distress. This portion of the social housing stock is eminently present in the east side of Oslo, creating a socio-spatial pattern of segregation between the east and west (Turner and Wessel 2013).

Regarding per capita residential floor area, Norway presents a growing trend which reach over 50 m² nationally (Xue 2018) and 50.5 m² in the Oslo area (Metz and Xue 2020). From a global perspective, the standard is high. Arguably, it is environmentally implausible to raise this standard.

Also, in most affluent countries, access to housing is considered an individual responsibility, and the purchasing power is often linked to social status.

The Oslo housing sector is boosted by a profitable housing market by raising prices and increasing the population size projected over the next years in the whole region. Therefore, Oslo's population growth, necessitating a substantial increase in the number of dwellings, represents a significant challenge concerning environmental sustainability if high per capita standards will remain similar to today. All the cultural aspects, such as population growth, economic traits and planning schemes, should be considered when discussing a future housing development that is challenging the growth-based one. Considering the specifics of the Oslo housing sector, which is almost exclusively marketised with a strong homeownership tenure diffusion, it is interesting to enter such a scenario gaming session that radically questions this model.

5. Analysis of the gaming session

Table 1 presents the analysis process. In this section, a summary of the findings of each step will be expounded and organised as follows. First, based on the statements from the game participants, the article summarises the blocking conditions for the degrowth scenario, both in the housing-specific and systemic conditions (Section 5.1). Systemic conditions refer to the aspects that are indirectly related to the housing sector but mostly related to the macro-dimension of society and economy, which, however, lays the foundations for the operation of the housing sector. Later, the conditions enabling the degrowth scenario are shown, again both the housing-specific and the systemic dimensions (Sections 5.2). Both Sections 5.1 and 5.2 are

analysed considering the structure and agency categories. The structure is broken down into themes of the political, socio-economic, technological, built environment and culture. On the agency side, the participants were grouped by their vested roles: planners, public institutions representatives, researchers and real estate developers.

5.1. Blocking conditions against the degrowth housing scenario

5.1.1. Housing specific conditions

There are several structural and agential conditions specific to the housing sector that block or hamper the achievement of degrowth housing development.

According to the game participants, in the political aspects of [Table 1](#), the absence of an adequate regulation structure to protect tenants and to ensure housing as a basic right threatens the social cohesion and justice that are pursued in the degrowth scenario.

On the socio-economic side, the predominant ownership model in Norway is seen as a major limitation in reaching the degrowth scenario. The participants point to the necessary intricate process of redistribution of the existing housing stock in the degrowth future that can be hampered by the private ownership of housing. According to the game participants, the redistribution process is a demanding exercise given the primacy of private property right. However, participants underlined the expensive and bureaucratically slow nature of the process of changing the existing housing stock from the inside, considering the architectural and technical challenges. Compensation mechanisms for the lost part of the dwelling, for instance, also need to be designed and enforced through public actions, which, to some, seem to overcomplicate the system by an extra regulatory level of bureaucracy.

Changing towards a degrowth housing development would require reducing the financialisation and speculation on the housing sector, involving stark decisions from the state. To the participants, the present financial mechanisms represent an important barrier as they promote profit-seeking in the housing market and, thus, discouraging other forms of more equitable redistribution of the housing stock. The financialisation mechanisms that revolve around property ownership reflect the very core of the “culture of ownership” in housing, which is mentioned by the game participants as another important blocking element to the degrowth scenario. Culture of ownership includes a social status trait that is inherent in housing, which, according to the participants, is hard to dismantle.

Another aspect mentioned by the participants is that changing the ownership culture would imply facing important social consequences, especially referring to the risk of rising inequality and discontent. Particularly, the game participants expressed concerns about the knowledge and skills of Norwegian planners, regarding questions of social justice and equality. They opined that a shift in the ownership culture and redistribution would require knowledge of the subject from the actors operating in the housing sector.

“It surely has something to do with culture ... we are not used to that and are not used to solving social problems” (Planner, about planners in Norway). Adding to the lack of knowledge, a planner underlines that the difficulty in facing social problems could derive from the cultural background of the planners. The participants’ claim on culture points to two directions: (1) it hints at the education of the planners since they may lack social subjects in their formation and curricula; and (2) it also hints at a less heightened social inequality situation in the Norwegian cities and society, requiring therefore less expertise on the equality and social justice subjects.

Furthermore, costs linked to the eco-efficiency measures are repeatedly highlighted by the game participants as an important blocking condition for reducing housing-related environmental impacts. According to the participants, following the high environmental standards in the building phase (eco-proof materials and systems, better technologies) raises the costs to a level that threatens housing affordability, thus reducing the attractiveness of the eco-efficiency measures for developers and future inhabitants.

The existing land use structures also hinder the degrowth scenario. According to (Akershus Fylkeskommune 2015), although the current regional plan and the law for the protection of the Marka forest have successfully managed to control sprawl trends over the years, low-density housing dominates in many of the suburban areas, as the participants mentioned. This specific urban landscape, often purely residential and dispersed, has increased car dependency and presents a lack of mix functions in these areas. These areas would need to undergo a strong transformation, which made some in the gaming session raise an eyebrow. On the agency side, as commented by the planner, “Norwegian planners are not ready for this quick transformation” (Planner).

When reflecting on a radical scenario, game participants forecasted that “the next generation will do it because they are far more global and greener” (planner). Today, it seems that the strong cultures of property and privacy, alongside social status, hinder the realisation of the degrowth scenario. As exemplified by one of the game participants, “We took the pines with us into the cities, and we wanted it private and with the thuja (juniper) hedges ...” (planner).

The social aspects appear central to the debate on the future housing scenario and are, according to the participants, strongly intertwined with questions of culture. Regarding the social aspects that were addressed in the game, participants hinted at the housing offer as an important factor. They suggested that it needs to be diversified and affordable for the degrowth scenario to be appealing and successful. This means overcoming technicalities and remodelling the current housing stock from the inside.

On the built-environment aspects, there are concerns about the rigidity of the present building stock, which is difficult to re-modulate to accommodate more inhabitants or different household compositions according to the professionals in the room. Especially in the city centre where several buildings are categorised as cultural heritage, a degrowth scenario, applying today’s regulations, seems complicated: this is due to strict procedures and regulations to preserve cultural heritage of the inner city’s artefacts. Participants also added that Norway is not conventionally used to building in height, and a participant referred ironically to “vertigo” of planners and inhabitants. Another element puzzling the participants was the current lack of adequate and equally distributed green and blue infrastructures. These are perceived as pivotal to the quality of living and necessary for conceiving a different future for the city.

From the agency side, the lack of motivation for being sustainable is recognised as a barrier by some game participants. For example, the private developer provokingly asks, “Do people really wish to have a sustainable consumption?”, hinting at a doubtful collective awareness and drive. An even more worrisome note of this study is the lack of professional awareness of the important role that the housing sector can play in driving sustainable transformation. As the planner claims, “it is very tough to consider limiting housing consumption as an answer to the environmental problems”. This last statement hints at an important question linked to the ecological awareness of the agents of change, notably among professionals.

5.1.2. Deep systemic conditions

The deep systemic conditions emerging from the gaming session appear at different levels. The major blocking structural conditions mentioned by the participants are linked to the regulatory dimension and the economic system, with its growth imperative. The participants underlined the importance of the regulative aspects and the planning system in the future scenario. Especially, reflections on the changes in these structures (e.g. regulations and plans), the conflicts arising (public–private) and the power (or lack of) of the local administrations are recurrent and considered crucial blocking conditions.

“Municipalities lack power in meeting the developers” (planner), and “Too many conflicts ... Often we deal with a chessboard with 100 squares, namely 100 owners” (planner). These excerpts, in the gaming session, underlined that both the question of conflict (with the local administrations feeling powerless) and the regulatory aspects are hard to change. These aspects could all act as barriers to

the degrowth scenario, as they reveal that the current marketised structure of the Norwegian housing sector cannot be managed if major changes in power relations do not occur.

Still on the structure side, the participants identified several key socio-economic conditions hindering the degrowth scenario realisation. Participants were concerned that a degrowth future for the housing sector would burden the groups at risk of housing exclusion, and that the power imbalance between planners, politicians and developers might increase the social risks and conflicts due to uneven redistribution processes.

On the economic side, the gaming session participants highlighted that the current economic system is not suited for such a change, including the tax system, the financial system and the capitalist logic. The participants stressed the financial structure in which the Norwegian housing sector is situated as a blocking condition for degrowth. The presence of a consolidated market economy in a capitalist context is a recurrent element of discussion and is referred to as a major block on the path to a degrowth future for the housing sector.

Private developers who participated in the gaming session hinted at new ways of acting, which might involve different actors and new practices ("It is possible to consider alternatives to the State initiatives"). Planners also agreed on this aspect and claimed: "The big Oslo developers could join their forces and make this happen. Instead of the State or municipalities ...". Regarding ways of achieving the degrowth scenario, private developers suggest incentives rather than regulations. "It is important that you also have the carrot ... if it is too radical ... it will not work". However, planners disagree with private developers on this aspect, suggesting that, for the scenario to work, you would also need to whip the private interests. "You must discipline owner's interests, they must be whipped, if not, you need money! You must have whip, money and planning!". But what private developers mentioned very clearly was the current individualistic culture of the "What is in it for me?", which significantly blocks the achievement of the discussed scenario.

5.2. Enabling conditions for the degrowth housing scenario

5.2.1. Housing specific conditions

According to the participants, the contextual and housing aspects seem to offer several enabling conditions. Some of the participants stressed that it would suffice to learn from the past when housing cooperatives were promoting housing accessibility and affordability. It seems that the degrowth scenario discussed in the gaming session resonates with the social democratic welfare model typical of the Norwegian housing sector in the past (Esping-Andersen 2013). In particular, degrowth could benefit from some of the lessons of the past, such as corporatism, with co-operatives and schemes to improve housing accessibility and affordability.

Participants underlined that some of the mechanisms in use before the neo-liberal wave in the 1980s (Andersson et al. 2010) could be restored in the housing sector of Oslo to ensure redistribution and affordability of the stock.

Another positive aspect, according to the participants, is that architects are increasingly paying attention to and promoting shared and modifiable housing solutions. This change in mindset implies that designers are swiftly adapting to societal changes, for instance, the increase in single persons households, etc. They also mentioned that this aspect agrees with the technological measures and the role of the internet in facilitating sharing of housing or products. In general, technological innovation in housing was, in fact, hailed by the gaming participants as positive and enabling. The architects in the gaming session showed awareness both of the environmental and social side of housing as they are already aiming at the zero-energy consumption in their projects (as in the case of Fyrstikkbakken 14), and are familiar with remodulation of units for different needs, which is something that the degrowth scenario would benefit from. Another positive aspect discovered is the third housing sector initiative, including NGOs and groups active in the territory. It suggests the political willingness to make housing more affordable, which represents indeed an enabling condition for such a scenario.

On the agency side, the participants shared the acknowledgement of the importance of the political will to promote change. Participants highlighted that environmentally progressive parties at the Oslo municipal government have successfully nudged towards the achievement of environmental goals: the reduction of car use and implementation of incentives for electric cars have been pushed by the Norwegian green party, which has also put on the agenda for the future of a car-free centre. These parties are perceived as frontrunners who are successful at pushing ecological changes to the top of the agenda.

5.2.2. Deep systemic conditions

Considering the deep systemic enabling conditions, the game participants mentioned, on the socio-economic side, the Norwegian oil fund, which, according to them, can be potentially turned into a “redistribution fund”. This economic tool would release the economic stress some groups might undergo in the future scenario, smoothing the redistribution process and ensuring life quality in cities. Innovation in finance is also considered beneficial. This, with a change in the role of banks in the housing sector, could boost a similar change.

On the cultural side, participants believed that there was a change happening in the social-status image of housing among the younger generations. It is more attractive to share, to have “green” habits and to live in cities. However, participants were uncertain whether environmental awareness is equally high in all the population. The environmental awareness and its consequences could indeed be a deep systemic enabling condition as it deeply affects the way policies are intended and developed. Planners in the room were referring to densification that has been going on in Oslo for decades as an important engine for this transformation. This awareness is important; however, the degrowth scenario nullifies the need for additional housing. Hence, the densification strategy, although environmentally friendly in a relative sense, is not what the scenario aims for.

6. Discussion

In light of the theories introduced in Section 3 – political economy and critical urban theory – these sections further interpret and discuss the findings from the gaming session.

I found a tendency among the participants to talk about conditions enabling or blocking sustainable housing development based on green growth thinking (which means decoupling housing growth from environmental impacts) instead of talking about degrowth in the housing development. Such a tendency illustrates how deeply entrenched, among architects, planners and developers, the idea that we should build more is, and that the challenge is to find environmentally friendly ways of doing it. Instead, the degrowth scenario shows that by limiting the per capita consumption of housing in the Oslo region, there is, in principle, no need to build more dwellings (as its existing size would accommodate all projected future inhabitants) (Metz and Xue 2020). In addition, it seemed that the participants were reluctant to acknowledge that per capita housing consumption can strongly impact the environment. To some, it was “very hard to consider reducing housing consumption as an answer to the environmental problem” (planner).

6.1. Blocking conditions, all derivatives of a major barrier?

Most blocking conditions mentioned in the game appear to be entrenched with one deepest structure, namely the growth imperative: it has repercussions on the financial, social, cultural and regulative sides. From the perspective of political economy, the growth imperative stems from capitalist society and its currently dominating neo-liberal regime. As underlined in the game analysis, many of the aspects are entrenched with it, especially the ownership model and the financial mechanisms of today’s Oslo housing sector. In Norway, interest rates on housing loans are low, policies for down payments are very favourable, and there are profitable banking schemes and tax deductions to promote savings to buy the first dwelling. These financial instruments and a small rental market

make ownership appealing to those who can enter the housing market. Once in the market, most of the dwellers are happy with housing price increase. The system is powered by financial instruments and price increases despite the social polarisation created between those inside and those outside the market.

A degrowth scenario would challenge these existing premises. Housing would no longer constitute an object for profit since it would be redistributed from the perspective of equitable access and as a basic right. Achieving this would entail a loss of capital for current speculators and homeowners. Housing would not increase in value, which would make the market profitable. This contributes to a lack of political will since both investors and dwelling-owning inhabitants would be worried by such a stark change. In contrary, those who do not own their dwellings (i.e. renters) would not have the same reasons to resist such change as they would benefit from it.

This discussion has roots in the agency, which is also expressed by the participants when considering their vested role: "what is in it for me?", a private developer provocatively asked the group during the gaming session. In a degrowth scenario, private developers would lose much of their benefits. Degrowth, as such, would affect their vested interest, which would require them to adapt their business to a new model. If their business thrives on the increasing values of land in the current societal growth, in the degrowth scenario, their profit would depend on other mechanisms. They might use their businesses to promote change in the current housing stock and to function as promoters of eco-tech measures in the sector. However, it is not an easy shift.

But what if the scenario maintains the same tenets as the capitalist ones? Capitalism presents a growth tendency, even when the economy does not grow. Such a need for growth in the system hampers anti-consumerism, which is the very bottom line of the degrowth scenario. Capital itself, as underlined by Harvey (2011), is a process, not a "thing". Capital is created and transformed in a spiralling process. It is a long-run process that makes it difficult to effectively change through ad hoc measures or temporary policies. Therefore, tackling some aspects of capitalism through adjustments is not a definite solution, as it would keep the main mechanisms going. It would create a skewed situation in which some sectors would keep pursuing the growing model, and not others.

The model under which capitalism currently operates in most affluent European countries is neo-liberalism, which thrives under deregulation and the culture of individual profit and ownership. As Harvey (2011) underlined, the neo-liberal regime, despite the economic crises it causes, still has political legitimacy. According to Harvey (2011), taming the neo-liberal model through ethical measures or social-democratic ones would not suffice. Even if a more ethical neo-liberal model was in place, it would not be possible to fully decouple the environmental and social impacts of economic growth (Harvey 2011).

As pointed out in the analysis, the lack of a regulative structure regarding the right to housing constitutes a barrier to the degrowth scenario. The claim made by the participants is reasonable since there is no regulation and other legislation in the Norwegian constitution pointing at housing as a basic right. Still, the so-called Sosialtjenesteloven allocates to the municipalities the responsibility of providing temporary housing solutions for those in need (Sosialtjenesteloven 2009). Norway nonetheless was among the large majority of countries voting for the international conventions on human rights when they were adopted, and Norway has ratified those rights (Menneskerettsloven 1999) as the right to a dignified life standard (including food, clothes and housing). This offers the leverage to improve the recognition of housing itself as a basic need. It needs to be included and promoted in the political agenda for it to become an enabling condition.

Regarding the redistribution of housing in the degrowth scenario, certain mechanisms must be in place to avoid skewed distribution of housing among the population. Redistribution can happen through changes in the physical structure of housing (e.g. remodelling and dividing bigger units) or through monetary compensation mechanisms (from who owns more to who owns less). All these mechanisms require both a change in regulations, but, more importantly, a structural change that would be unthinkable in a pro-growth housing sector.

Similarly, the gaming session highlighted questions of power concerning housing market interests in the Oslo area. The participants pointed out that the local authorities often feel powerless in the face of private and market interests. It would be even more so trying to promote a degrowth scenario. The local authorities' lack of power is a more severe barrier if the policy they want to promote is sharply at odds with the market logic. Because of neo-liberal policies, local authorities and smaller communities tend to lose their power. This is especially true in communities with lower incomes, pre-existing social problems or with no specific interest groups. Regarding this concern, Andersen and Skrede (2017) showed that, despite the aim of the Oslo municipality to ensure a socially sustainable city, the way projects are allocated and developed still shows that planners lack power in the face of developers, especially in certain areas where power groups are not strong. As an example, the eastern Oslo is the part of the city receiving most of the densification projects, while the west undergoes fewer transformations given the low-density urban structure, the resistance and the local communities' power. Andersen and Skrede (2017) also showed that the projects developed in the east were of low quality and cheaper building materials. Some of these drawbacks of the current approach of planners and institutions could negatively affect the realisation of the degrowth scenario, and they show some conflicts arising from the current neo-liberal model.

Culturally, the current housing model thrives on individualism. Ownership culture and profit culture are just derivatives of neoliberalism, which are part of the discussions in the gaming session. A successful person can provide for herself, and in the case of failure, the system is not to blame. This cultural dominance makes poverty our own failure. It is not surprising that, in the gaming session, there were several discussions on cultural matters. Some of them were in fact described as "typical Norwegian" whereas they could rather be termed "typical neo-liberal" cultural traits (e.g. ownership culture, "what is in it for me?"). Regarding the social status associated with housing in the Norwegian context, it appears from the gaming session that both the size of the housing and its location are crucial. As in the majority of the marketised housing sectors of affluent countries, housing plays a role in forming and manifesting social status. It is interconnected with income levels, education levels, ethnicity and age.

A redistribution, as the one proposed in the degrowth scenario, could have the force of limiting gentrification and segregation. The scenario aims to reduce the gap in inequality, acting therefore as a means of resolving some social problems linked to the city. Nevertheless, the process of reducing inequality through redistribution will most likely not be accepted easily by all the inhabitants. Such friction could create forms of resistance, which could happen through grass roots movement or political debates.

Hence, there are limits posed by the current capitalist and neo-liberal conditions if a degrowth future were to be pursued. In such a system, where the private sector seeks for profit, any anti-consumerist attempt would be almost impossible. A reasoned and functional degrowth future is dependent on the resolution of capitalistic bonds and tenets. The realisation of a degrowth future cannot happen without a full understanding of the barriers posed by the current capitalist system and the various aspects linked to it. The current capitalist conditions cannot be tamed sufficiently to achieve greater goals for the sake of society or the environment.

From a critical urban theory perspective, under the dominant neo-liberal capitalist conditions, the housing sector, according to Marcuse (2012), experiences a crisis that is three-folded and inseparable from the mechanisms of capitalism.

- (a) Commodification of housing
- (b) Restriction of government involvement in housing
- (c) Myth of ownership

I added, as a fourth pillar, the high environmental impacts of housing, which is one of the key dimensions of housing to be addressed in the degrowth scenario.

Commodification of housing is reflected in the actions of capitalism: financialisation and speculation are at the very core of the current housing system. As mentioned by the participants of the gaming session, these financial aspects partially constitute the ownership culture and act as structural barriers. However, as discussed by the participants, some features of the Oslo housing sector, if brought back in its entirety, could tame the strong commodification of housing and facilitate a degrowth housing scenario. In particular, the presence of housing and the so-called “borettslag” (cooperative housing) work on principles of communality of spaces (yards, garages, etc.), participation of the inhabitants in the decision-making, and exclusive user rights of the single units. The model is still active, although it is slightly different from the past. The exclusive user right can now be sold on the housing market without any price regulation, and in general, cooperatives now operate as developers under the neo-liberal regime.

7. Conclusions

The article aimed to recognise elements blocking or enabling the achievement of a degrowth scenario in the housing sector in the context of the Oslo city region. It starts from a pre-designed degrowth scenario (Meté and Xue 2020) in which housing is a right; and its consumption is limited by a maximum cap per capita in which an equitable redistribution of the existing stock is in place to keep consumption under control.

The analysis of the gaming session, using the theories of structure–agency relationships, political economy and critical urban studies, shows that the current growth-based housing development represents the main structural blocking condition to realising degrowth scenario. In particular, the current capitalist model creates a series of repercussions on the housing sector (Marcuse 2012), which concurs with the so-called housing crisis. It has cultural, economic and social repercussions, which are the most cited blocking aspects mentioned by the participants in the gaming session. These include regulatory aspects, financial, social and cultural aspects (social status and culture of ownership).

The article therefore shows that dissolving the bond that housing has with capitalism, at least in the Norwegian context, is fundamental but requires a major effort: it needs to happen in the whole economy to function in a consistent way. Schneider et al. (2013), however, suggested that housing itself could be a driver of wider economic degrowth. This would happen because reducing housing consumption would increase its availability, concurring in reducing debt (both private and state-owned) and consequently reducing dependence on economic growth.

This article shows that maintaining a partial version of capitalism in other sectors, whether more ethical or equitable, presents risks and challenges. Such a version of the future would require extensive use of regulations to put capitalism under control. It would still leave questions of power in different sectors untouched, and several sectors occupied with the maximisation of profit, with the consequential environmental and social impacts presented by several scholars (Foster 2011; Fotopoulos 2007).

The identification of societal conditions as potentials or barriers to degrowth also lays the foundation for a discussion of the steps to degrowth in an affluent Western city like Oslo. It is clear from the results of the study that the major neo-liberal traits of growth-based housing development need to be dismantled to promote the degrowth scenario in the housing sector. Oslo region could be a frontrunner in reducing the financialisation of its housing sector by promoting a wide array of tenure forms, increasing accessibility and affordability and targeting the habits leading to extreme forms of overconsumption (too many square metres per capita or luxurious consumption of housing [second and third homes or investment dwellings in the Oslo region]). A study on the efficient use of the current housing stock and its occupancy rate could promote a reduction in new construction, which is ultimately to what the scenario would lead. As a result of this first step, different tenure forms would be more common (as rental, sharing solutions, etc.), and the social status connected

to housing would be less impactful on the inhabitants' choices. Easing into the most radical measures of degrowth, as the consumption cap, is the key to avoiding friction and resistance.

Furthermore, the study contributes to housing research by applying future studies in the field of housing and degrowth. It used the backcasting method to define blocks and potentials to reach a degrowth scenario. This has helped to enlarge the scope of the studies on degrowth, from envisioning futures to questioning and challenging the structural conditions enabling or blocking degrowth. This method used in different sectors could be utterly beneficial in planning to imagine the unthinkable and to design the future of our cities too. The backcasting approach applied to a gaming session has been fruitful not only to the study itself but also to the participants who find this "visionary" approach utterly inspiring for their practice as planners or designers too. Degrowth researchers and activists could benefit from a similar approach as they could apply it to different aspects of a society that degrowth would change (e.g. economy, development, education).

Concurrently, the method presents challenges. It needs to be grounded on a previously designed scenario, and it relies entirely on the quality of this scenario. If the designed scenario is unclear, it would create confusion and diminish the efficaciousness of the gaming session. The scenario, during the gaming session, must be conveyed clearly to the participants, as they solely rely on the knowledge brought to the table by the researcher designing it. In addition, the analysis of the gaming results requires deeper analytical tools and skills that could benefit any multidisciplinary research group.

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