

An aerial, night-time view of a dense city skyline, likely London, with numerous skyscrapers and buildings illuminated with blue and white lights. The streets are visible, showing traffic light trails.

**A CITY IS NOT A TOY**  
**How SimCity Plays with Urbanism**

**Daniel G. Lobo**

**DP 15/05**  
**ISSN 1469 - 1922**

# A CITY IS NOT A TOY

## How SimCity Plays with Urbanism

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A preliminary version of some of this material appeared in  
“The Next American City: Cities & Technology” Issue 6, 2004. [www.americancity.org](http://www.americancity.org)



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*Is it time – to be Mayor?*

*Do you have the empire-building skills to develop a metropolis of soaring skyscrapers or the aesthetic sensibilities to create a city that delights the eye? Do you enjoy tinkering with an entire world – widening a river bed there, increasing a tax rate here – to see the effects on the inhabitants under your sway? Or do you want to get down and dirty with The Sims in your streets, taking on missions that have you hurtling down highways in a tank?*

These are the welcome lines to SimCity 4 Deluxe, the last release of the most influential strategy game in the history of urban planning. While designing the game “Raid on Bungeling Bay” in 1984 Bill Wright, a Macintosh programmer, discovered that flying an attack helicopter over a swath of islands wasn’t half as fun as designing the islands themselves. Out of a developing interest in city planning and computer modeling theory he conceived of a game that would let players build cities and watch them operate. The early popularity of the game would evolve into a family of related software of varied success: SimEarth, SimPark, SimTunes... all based around the SimCity flagship. The idea of simulated people had been part of SimCity for years, and in the original game a prominent place was taken over by “The Sims”, first released in 2000, one of the most popular simulation games of the new century. The Sims became independent with a growing line of expansion packs, which moved away from the overall scope of city development to play the micro-managed development of individuals. After a four years’ hiatus, The Sims’ success encouraged the release of SimCity4, with added compatibility between the two. Would you like to see the reaction of one of the Sims you created in the last city of your invention? Now, it can be done. The history of the game and its multiple permutations has paralleled and even influenced the now omnipresent, if not always well-conceived, use of computer simulation in contemporary urban planning.

This paper offers an overview of the game’s history and mechanisms in order to explore the impact of its use as an educational and professional tool. In particular, it aims to illustrate how it relates to the practice of studying the built environment and what might be the elements that make it relevant to the culture of cities.



## GAME INFLUENCES

Wright founded Maxis with Jeff Braun, out of what the company describes as a lifetime interest in emergent complex behavior from simple systems. More specifically, the game's inspiration came from Jay Forrester, the "founding father" of systems dynamics, which analyzes how complex systems change over time. Forrester, an outsider to the field of planning, was an MIT Professor of Management. He laid the foundation for modern computer simulation in his 1969 book, *Urban Dynamics*. He tried to disprove popular conceptions about why cities deteriorate, demonstrating through a computer model of the relationships of industry, housing, and population that low-cost housing policies in Boston at the time were actually worsening unemployment. Instead of simple intuitions about urban policy that treated symptoms instead of causes of urban decay, his book advocated a multivariate assessment of existing conditions and how they might fluctuate with changes in job training, new enterprise, and low income housing. If his proposal was not entirely successful, it was because not all behavior could be modeled effectively and because of the proliferation of assumptions.

Forrester's model applied statistical data to the city as a whole rather than treating the more localized effects. For example, the model, if applied to policing, would look at the ratio of total crime to the number of police employed citywide instead of focusing on differences of police coverage and crime trends in particular neighborhoods. Early versions of SimCity used citywide measures as well, but SimCity 4 remedies this problem, at least to some extent. SimCity 4 producer Kevin Hogan said, "We wanted location to matter, so that where you placed your schools made a difference." However, as will be described later, the game shows signs of overestimating the policy impact of location over specific physical aspects.

Forrester also wrote *World Dynamics* in an attempt to model the entire planet, much like the later Maxis game *SimEarth*. Whether applied at the level of the neighborhood, or applied to the entire world, Forrester's work reflects similar beliefs. Namely, we can best understand evolving systems by studying any relevant variable through the lens of free-market philosophy, that is, by figuring out how changing supply and demand of any desired good can bring about different outcomes. Forrester's contribution was very significant during this period as part of the stream of work that is better remembered by the release of the Club of Rome's "Limits to Growth" in 1972. This Malthusian report modeled the interaction of a growing population, industrial growth with the earth resources in a work that was criticized for not reflecting accurately the change that the world would undertake in the following years. The ongoing debate between critics and supporters, who argue that the model would come to completion in 2015, reflects one of the many obstacles that SimCity faces as a reliable tool to explore the built environment.

Berkley architect and mathematician Christopher Alexander provided the second key influence for SimCity. His work in the 1960s and 1970s advocated an idealistic departure from then popular top-down modernist models towards what he called a universal way of design and development, based in the logic of human-city interrelations. In his essay "A City is not a Tree", he denounced cities that fit a "semi-lattice", where sections bleed into one another by virtue of overlapping functional systems. This research was the result of a mathematical model of interrelations and functions coexisting alongside an idealized interpretation of the basic elements of architecture. For instance in his books a "Timeless Way of Building" and "A Pattern Language" he supports using certain elements such as the circle, or light on two

sides of a room. Yet corridors are deemed inappropriate because they stop joining outside and inside, and, he suggests, are a sign of totalitarian governments. Alexander applied his planning theories to the basic elements of architecture, suggesting that universal principles could be found that are applicable from the organization of the entire countryside down to the construction of a home. The more abstract and timeless the set of principles, the more ways they could be reconfigured to create various and beautiful cities. His work, though ostensibly universal, emphasizes particular American qualities. The very notion of throwing off the fixed ideas of the Old World and searching for universal truths has been embedded in New World planning since the beginning of colonization.

Witold Rybcyski, Professor of Urbanism at the University of Philadelphia, discusses other early colonial assumptions about cities that Wright more recently appears to have adopted. In his 1995 book *City Life*, Rybczynski argues that the American City is different from the European City because early planners were met with the sense of abundant open space and planned accordingly. They often allowed laissez-faire consumption of undeveloped land. The principles of freedom, equality, and respect, so the theory went, would arise naturally in a world with the social and physical space for individuals to vote with their actions and real estate purchases. Early planners also often envisioned continued growth. To the extent that planning happened, it was done in a way that provided for the possibility of expansion, often through a grid that could grow proportionately with the population. In addition, grid lots were favored as being easier to build on, divide up, and market.



## **SIMCITY'S BLACK BOX**

The work of Forrester, Alexander and Rybcynski provides SimCity's black box foundational ingredients. The key elements are a highly sophisticated mathematical model, individual agency based on supply and demand, and a universal agreement on how life should be lived.

When playing the game, players' performances are rated according to whether all goods, from industrial land to public schools, are being supplied at levels that equal a computer-calculated model of demand. A basic element of a game like this is discovering where those levels lie. Primarily the player could use trial and error but a combination of playing with on-line forums and publications to help discover the rules is common among most gamers. Some components clearly defy reason and there does not even seem to be a humorous underpinning to it. For instance, cities don't need to invest in water supply until they reach a certain population. It is suggested that small towns may use wells. Agricultural land doesn't need water supply either. The assumption is that it is served by its own irrigation. You have a number of digital advisors who act as the employees of the mayor in different areas such as finance, utilities or the environment. A case can be made that their usefulness is questionable at best. Police coverage is not really required until certain size is reached, no matter how loud the security advisor may scream at you.

Supply and demand is embedded in a sophisticated tax system with its own code. The default tax rate for any developer type is 7%. But, it is wise to raise all the taxes to 9% in order to succeed as soon as you establish your city. The neutral tax rate depends on population but does not change much for small cities. It begins at 9% and drops gradually to 8% after residential population grows to 2,250,000. The negative effect of raising taxes remains for several months after the mayor changes the policy and the taxes go back to a neutral rate. If taxes are raised they need to be raised gradually. In addition agricultural Sims do not pay taxes. Game instructions note how agriculture is not driven by business demand, but it offers free jobs, feeding residential demand while being fed by residential population.

Second, the game allows numerous configurations of a limited number of building designs and zoning, which imposes a universal aesthetic on the cityscape. This aesthetic favors segregated zoning over mixed use, which, Hogan says allows the players to more easily visually analyze their creation, but also gives rise to homogeneous, class segregated neighborhoods. With new versions of SimCity styles have been expanded to provide an illusion of variety. Although these options embody a rather superficial approach to the physical implications of urban design, they do help to reveal some of the background assumptions. Todd Reamon, associate producer, explains that a player's zoning will result in groups of buildings all of one particular style—so that an area has a nice cohesive appearance, while another area next to it zoned or developed at a later time has a different style—promoting a nice feeling of separate neighborhoods, and visually varied development.

The first three basic style sets are:

### **Chicago, 1890**

Reamon notes that it is a suitable time frame from which to start because it was not until then that steel infrastructure engineering advances allowed truly tall buildings to be built, a necessary component to SimCity's upper range of denser population/capacity buildings

and an expected verticality to a metropolis simulation. And nowhere in the world was urban architecture more exciting than in Chicago.

The Chicago 1890 lower density residential buildings are primarily of the Victorian style and its subcategories [Second Empire, Stick, Queen Anne, Richardsonian Romanesque, Folk Victorian, etc].

### **New York, 1940**

Reamon continues: “The New York set aspires to greater heights, dramatically emphasized verticality, tempered with more modern, minimal or Art Deco detail. A Chicago building might be an elongated box, and a New York building would terrace up to a great tower. The lower density New York Residential buildings are represented by architectural styles common in the mid-Twentieth Century [Prairie, Shingle, Italian Renaissance, Art Deco, etc]”

### **Houston, 2000**

This set is remarkable in so far as it is the only true contemporary reference. Houston is an American planning paradigm. It is the only major city in the country without a zoning ordinance. It offers the iconic representation of a SimCity of empty parking lots, disconnected business districts and segregated residential areas. Reamon argues that it represents the great postmodern glass and steel superstructures. For him, Houston is the ideal inspirational setting for this contemporary group of buildings, as many ultra-modern skyscrapers sprung up along its skyline during the prosperity there near the close of the 20th Century.

The houses and mansions of the Houston set are markedly more modern, utilizing the same improved technology of materials that their larger compatriots showcase, but on an obviously smaller scale. Architect Richard Meier was a chief inspiration in the design of many of these modern houses.

A fourth style has been added in the last version of the game: **Euro-Contemporary**

That is it, no date or period in time but a generic stereotype and amalgam of European styles maybe required because Electronic Arts’ games are distributed worldwide and are now translated into 17 languages.

In addition, industrial buildings are treated differently in the game, but they can also be divided into four major groups - Dirty, Manufacturing, High-tech and Agriculture. These are also separated by significant spans of time somewhat analogous to the three basic periods of the residential and commercial buildings. The first period/purpose of the Industrial buildings is that of the Dirty Industry equating to turn of the (20th) century heavy industry such as mills or refineries. The mid-century Industry buildings equate to the Manufacturing subset, which are predominately factories and manufacturing plants. The modern Industrial component would be the High-tech Industry set, ‘green’ architecture serving such industries as aerospace, computer, defense or biotech.

You can select how many of these styles will be in effect in your city at any time, and have them all develop at the same time or change the style every few years. A new feature allows the player to pick a specific building and check a box, thereby making the building “Historical”. PRIMA’S Official Strategy Guide tells how this is a great way to preserve buildings that you find appealing but that this “Historical designation” will not protect a building from abandonment or

catastrophic events. The building's inability to redevelop in the face of changing desirability might make it more prone to abandonment. Historic preservation, although available, offers no advantages, nor will any of the styles really affect the development of your city, other than defining the aesthetics of a neighborhood and providing a homogeneous town, or if you are skillful enough, a scramble of architectural trends.

This leads to the third element: An inherited colonial view of land as an infinite supply. The game begins by allowing the player to settle an area of land devoid of other cities or inhabitants, favoring urban grid structures over organic development. Regions are divided into areas of different sizes where the new city will grow and will have the opportunity to expand to an adjoining area or create a number of business deals with its neighbors. Regional planning becomes a game of wits between cities trying to get rid of its agricultural production, to flourish as a commercial center or outsourcing its trash collection. Conditions that more often than not accurately reflect the North American landscape.

The irrelevance of the specific form of the city, from styles to historic preservation, from streetscape to building heights, tends to suggest that the game may overestimate the policy impact of location over the physical implications. It might be agreed that gaming software needs to set to one side those aspects that although very relevant are difficult to control in urban scenarios of such complexity. However, recent versions of the game aim for a greater degree of complexity through the ability to look more closely at, and direct more specifically, the lives of particular Sim-Citizens. Whether the characters are created separately in any version of "the Sims" and then imported, or created directly in SimCity, these special citizens will offer an insight into the sociology of SimCity. Each "My Sim" has a wealth-level attached to him.

Any My Sim takes on the attributes of the first house this citizen is placed in. If a house is of a low residential status, low education and health quotient, the Sim's own attributes will reflect that and change in conjunction with the structure even if the character was an imported Sim of high wealth. Class mobility is somewhat idealized and segregated, once a Sim enters the game his wealth level can increase but never drop. In situations of crisis, the residents will only endure the conditions for about 6 SimCity months, after this period if things have not improved or regained the former status the people will flee town, for imaginary suburbs or competing cities. Nobody who has moved up the social ladder will go down in SimCity. In this respect there is a strong relationship between criminality and wealth-level. If you focus your money on the wealthy the education quotient may be increased faster but crime will increase scaring the rich Sims out of town. Without inexpensive alternatives to reduce crime, universal education is the best option. Alongside wealth and unemployment, the base criminality levels are influenced by education and class, leading to the conclusion that the lower the wealth level the higher percentage of criminal activity. Moreover, landmark and special service buildings carry their own positive and negative effects. For instance a convention center or a state fair would increase wealth but will also pump up criminality rates counteracting any police protection activities.

The black box of the game hides several other assumptions, among them the emphasis on the power of the mayor. The only way that SimCity will eject a mayor from office is if the city budget goes in the red beyond 100,000 Simoleons. Other than that, the mayor will not have to face the council questionings, campaign for re-elections, nor undergo the pressure of any

other democratic process. And what does SimCity tell you once you have lost the game? “Try an easier job. Run for senator”.

The player begins to play in what is called “God Mode”, creating mountains, rivers, and wildlife, with gestures of biblical proportions. Once this god is pleased with the land, he will create the city and take human form. As mayor, the player continues to operate in a god mode of sorts, only the ability to modify the terrain, or create landscape free of charge has been lost. He maintains absolute power to build, demolish, tax and spend. Unwieldy growth and megalomaniacal, destructive behavior are the two poles of city operation and the player’s most likely courses of action. Thus the heart of the game is much less a universal vision of city design than it is a reflection of the most extremes tendencies of development in America found in the few areas in which one person has total control over a large parcel of land—whether a powerful mayor pursuing an urban renewal project, or a developer creating a massive planned community in the middle of dessert or farmlands. But the many parts of urban planning and development that do not reflect this model of total control over virgin territory get short shrift. SimCity’s narrow lens only tells half of the story of urban development. But aspiring and practicing educators and planning professionals have been looking through this lens for fifteen years, with influential results.



## NOT JUST A GAME

The early utopian beginning of SimCity stressed a desire to influence policy, have an educational role, and illustrate how cities should ideally develop. No other game has been used so widely in schools to help understand the different elements of local government. And although SimCity is now looking to the crossroads of simulation and action games, like the missions of the new “Rush Hour” expansion pack, the game’s developers still consider the educational market as one of its key audiences. Lucy Bradshaw, Maxis General Manager, expressed the firm’s plans to continue teacher’s guides for SimCity, school licenses, and a series of Sim kid’s products during the Markle Forum on Children and Media in 2002.. In her view, the success of the game also had to be tied to special contacts outside the gaming industry, like university partnerships. David Lublin, a professor in the Department of Governance at American University , used SimCity to teach 20<sup>th</sup> Century local government. The students had to write a paper after creating a SimCity of their own and analyzing the underlying principles. “A fundamental aspect of the paper was to stress how SimCity reflected real world conditions, and what aspects were ignored or sent to a second plane”, he said.

Because of the widespread use of SimCity in schools and homes, it is easy to make the case, as did Paul Starr, founder of the American Prospect, that SimCity in 1995 was a more influential introduction to city planning than any book. His view is still valid today, and it should be a cause for some concern.

Although remaining significant, the differences between SimCity and a real city seem to be narrowing. The game has evolved to consider more sophisticated real-life issues. Maxis producer Hogan notes that based on feedback from users, the game designers added such features as development on hilly terrain, regional planning, and bedroom communities to resemble features of real-life urbanism. But more importantly, real world planning increasingly resembles SimCity because of the growing use of related technology, often in support of a SimCity-like top-down model of local government.

Bradshaw also pointed to the opportunity for a heavy SimCity presence in the Geographic Information Systems (GIS) market. The GIS phenomenon is a consequence of the maturity of data integration with visual representation. Around 1990, GIS replaced paper maps as the main medium of geographic analysis in government agencies across the nation. GIS integrates different sets of geographic data on computer screens by, in effect, allowing a user to overlay transparencies of different data sets. This system can then show, for example, which homes are within a five-minute drive of a fire station. While its early roots were in evaluating how environmental conditions limited potential developable land, many planning departments now use GIS to evaluate social elements of city life. For instance, many departments overlay Census data to make zoning decisions relative to income, class, education levels, and development desirability. SimCity has the same basic analytic mechanisms as GIS; consequently, when schools use SimCity to teach urban planning and politics, they teach the framework of analyzing environmental and social relations via GIS.

The arena of education provides a very useful insight into the shift from SimCity to GIS. There have been several studies to evaluate the impact and usefulness of GIS as a valid classroom tool. One of the most relevant is the pilot project led by TERC, a nonprofit education research

and development company based in Cambridge, Massachusetts. The project developed in the mid 90's an introductory curriculum unit: Mapping our Neighborhood – A guide to Getting Started with GIS. The project concluded that middle school students can use GIS to better understand and help improve their communities. At the same time, students will be developing mathematical skills and knowledge of science and technology. It is relevant to point out the absence of a learning goal oriented towards the social sciences or the humanities. Typically the research setting encourages students to evaluate environmental conditions where it is relatively easy to produce a report using mapping and controllable laboratory conditions. An example would be a 7<sup>th</sup> grade group studying the behavior of a river that flows near the school. Fewer schools choose to study interdisciplinary elements such as the history and development of several Boston neighborhoods from where the students were drawn.

Most educators agree that GIS is too complicated to attract students at the high school level. This pilot program employed several techniques, including working with SimCity to simulate community growth and dynamics. The study indicated a strong synergy between paper maps, electronic mapping, computer simulations such as SimCity and real-world problem solving. Students were interested in using SimCity to create their own simulated environment. The researchers suggest that SimCity is an extremely powerful and useful GIS-like tool, which engages the students and provides spatial visualizations that support their work with other GIS tools. As a result of their work with SimCity they returned with new interest to questions of zoning, transportation and infrastructure but SimCity as such was insufficient to explore these aspects of their environment. It was far more productive for them to use ArcView, a leading GIS software package, where they could locate their home and school, and trace connections between the elements, such as a bus route from home to a recreation area. SimCity was most useful for generating interest and understanding the different urban activities and to raising questions that could be addressed with the other tools.

Similar studies are reaching parallel conclusions. Nathan Bos, assistant researcher at the University of Michigan School of Information, maintains that the challenge of using complex simulations for education is helping students move up the difficult learning curve by using these tools. He suggest that introducing pupils to games such a SimCity allows them to aspire to a better understanding of the more complex, and useful, tools available. According to his work, SimCity, as a game without competition and no winning goals, offers two engaging features. It provides organic feedback and it allows for the challenge of independent level growth. But much as he praises these features of the game, Bos also notes how much of the game needs to be adapted for a meaningful use in the classroom. For instance, it needs solid teacher assessment tools and a capacity to get into the black box to modify the simulation engine. Also it needs to get to support adjusting tools and changing the assumptions from within. In particular Bos points to the need to run parallel comparative scenarios where the player has the ability to study how changing a single assumption affects the outcome.

But if games, even scenario-oriented games, have failed to be a solid education aid is precisely because they are games. It is not only that game developers have difficulties understanding the environment of the classroom, it is that they are engaged in the legitimate activity of designing a game. A most interesting argument of Ted Friedman in his article "The Semiotics of SimCity" supports this notion. The essence of computer game playing is to learn what the inner relationships are through the process of playing the game. "A computer

game is a process of demystification: One succeeds by discovering how the software is put together.” One could defend the position that playing software like this effectively has to start by constructing simple general assumptions, that is, something that resembles a stereotype. This would be a perfectly legitimate defense of the game. But it comes very short not only for something that has an influence in education and the profession but, I will argue, a biased element of the culture of cities.

Planning can hardly be a game and the use of technology in its development should not be taken lightly. Yet planner sometimes get overwhelmed with the technology and forget that GIS by itself cannot address issues like gentrification, race inequality, immigration or the effect of market flows in urban regions. GIS can tell planners what a policy’s likely effects will be (for example, how many existing residents might be displaced as a result of a new redevelopment project) but it cannot ultimately say whether those effects are desirable. Edward Soja, Professor of Urban Planning at the University of California, calls it part of “a reconstitution of our realities” when cities are reshaped according to analysis that tell only part of the story with little public scrutiny. Unfortunately, gambling on policies and investments is a situation that occurs both onscreen, and in the real world. Soja notes the painful example that was the management of Orange County, California. In the early 1990’s, facing strict limits on property tax increases, county tax collector Robert Citron modeled, and then implemented, a plan for investing the county’s tax revenue in the financial markets. For a short time, it seemed an extraordinary success. He was highly praised, and under virtually no scrutiny, until the systems crashed. His gamble, to invest on short-term interest rates and bet they remain relatively low compared with medium-term interest rates, failed after the Federal Reserve Bank began to raise US interest rates in 1994. Citron’s intriguing idea, divorced from the reality of possible decline in financial markets and bereft of oversight from people who could say no to playing the market with taxpayer money, left Orange County \$1.64 billion debt. And, as Soja points out, Citron’s game could not be rebooted and played again.

SimCity-like data analysis may also blind city leaders to the problems that lie out of its geopolitical scope.

For example, Washington, D.C. Mayor Anthony Williams’ policies sound like a case study right out of a SimCity scenario. DC cannot tax 66% of the local income, 11% of real property is tax exempt and the Federal Government owns 42% of the real property. So what is there to do with a budget that is in deficit by nature? According to Mayor Williams, a key element is to attract 100,000 new, wealthy workers who would provide high taxes. In the meantime, for instance the sewage overflows into the Anacostia River when it rains, and even if the infrastructure could get fixed 60% of the contamination comes from the Maryland watershed. The first thing SimCity teaches is to put your pollution at the border of the region so that it goes to your neighbor, not you. Much like SimCity, the USA’s capital is using advanced GIS and data systems with questionable effects. According to Suzanne Peck, the District’s chief technology officer, “No other U.S. city has a digital mapping database so rich with data or so robust with commercial quality search and mapping functions”. But unlike SimCity, people in the District have a right to examine the assumptions in the policy model of the Mayor. Nevertheless, the resemblance between city life and that of the game is painfully close.

One of the main problems that the software InterSCOPE faced when it was presented to a professional audience is that it was perceived to be a caricature of city life. IT Spatial

is a technology company specialized in interactive 3D visualization for decision support systems based in McLean, Virginia. One of its main projects is the integration of GIS data, with three-dimensional representation and animation. They have used their InterSCOPE with mixed results. In 2002 as part of a Washington DC downtown revitalization program they had the opportunity to represent several development scenarios. Ultimately, this was a tool that should ease the introduction of new urban proposals to community members and residents, who supposedly lack the training to appreciate them. But at the time, it never made it to a community meeting. The software had all the downfalls of SimCity and none of the advantages. It couldn't test the evolution of similar scenarios in real time and at best it offered a frozen three-dimensional representation where the user could either fly over the development or take the viewpoint of a car driver. The programmer made a presentation for a large audience of planning professionals, developers and city officials behind closed doors. The animation seemed to be in the hands of someone driving under the influence of alcohol in a landscape of barren, dark streets and frightening architecture. After he left the room, there was consensus for once: It looked like a game. More than a development proposal it looked like "Zombie City Escape from DC".

Of course the failure could be due to the lack of appropriate rendering or to a prejudice against this representation. Many community activists and professionals prefer to show sketches that give the impression of an idea in transformation, rather than sophisticated computer renderings that may lead one to believe that decisions have already been taken. But I do not really think that this was the reason. This attempt failed to integrate in any useful manner the data, graphic and otherwise, which represented existing conditions with alternatives.

With this in mind, I am inclined to believe that a pitfall awaits if we swallow the bait of the dynamics of a game instead of taking a careful look at our complex realities. But relying on the game is precisely what many professionals wish to see happen. William Miller, director of educational services at ESRI – the leading firm in GIS software education services- at his 1998 keynote presentation at the Tools for Community Design and Decision Making Conference said:

“Simulation-based decision support systems need to be developed to model both our natural and urban environments, as well as the interaction between those environments... I should say, “especially” the interaction between those environments. This is different from what-if modeling, which looks at a predetermined set of alternatives. Simulations allow us to look at those “undetermined alternatives”, or probable consequences, of what might happen based on a set of assumptions. What we need here is a SimCity approach to GIS that allows us to study the interactive behavior of multiple environments over time. The next major breakthrough in GIS will come when we can build valid time-dependent simulation models of our landscape”.



## POWER-TRIP PLANNING

In the previous pages I aimed to illustrate three key aspects of the game. These were, first, the internal premise and background of the game, second, a description of some of its fundamental elements, and third the educational and professional influence in urban studies. In all three counts, I aimed to shed some light on why it cannot be used successfully as a reliable testing tool. The explanations range from the secretive nature of a computer game and its predisposition not to unveil its mechanisms to the bias of its founding background. Its downfalls include serious limitations as an educational tool, since it is constrained to test fantasy scenarios. And the technological ramifications explain how geographic information systems lack the ability to run a scenario in real time like SimCity thus stopping us from using one of its most engaging features.

It would be foolish and irresponsible to deny in any way the importance and potential of GIS. But its use and evolution are aspects that deserve separate attention. There are worrying parallels with certain policy practices, which may or may not ultimately stem out of SimCity but that nevertheless belong to similar mechanisms of rationalizing the city. However, the question remains as to why this game is something that we should be concerned about if it is not that important, if it cannot really be used reliably in any of these settings. I have also been hinting at another key aspect throughout this paper that tries to answer that question. This is what I would call the cultural use of SimCity.

We could look at why the XVIII century paintings of the Venice canals by Canaletto are important to understand that city. These pictures represent well know scenes of the Venetian urban landscape at an extraordinarily high level. It is well documented that Canaletto composed creatively an image not from a straight forward representation of reality but from an interpretation, which included forcing views that otherwise would not be accessible to the naked eye. We would have to agree that the significance lies more appropriately in the cultural impact and not whether his paintings are a useful tool to analyze and test the morphology of the Venice canal. It is useful as a very sophisticated representation, an interpretation, of a city and its elements in a particular moment in time. What is really interesting about this work for me is to begin to answer the question of what is the array of representations of Venice that constitute the perceived images, real or imagined, of that city and in what way they have been influential.

Similarly, I am of the view that a key interest and value of SimCity lies in its cultural and social use. Like other scenario games it enables the player to fantasize about the physical world of the city. Henry Jenkins, Director of the Comparative Media Studies Program at the Massachusetts Institute of Technology, argues persuasively that this is a way to connect the player to the world. Enforcing the creation of stereotypes would be troubling if this were the only reality that the player receives. However, more often than not, I do not think this is the case. The immediate follow up question to this essay lies in the need to explore gaming as an educational tool and if stereotyping occurs as a result of playing.

At the introduction of this analysis I mentioned how one of the most important elements of SimCity is an interest in emergent complex behavior from simple systems. This is a perfectly reasonable area of investigation, and probably it makes sense to construct highly

sophisticated games from this premise. SimCity and the Sims are not ordinary games and I would still defend that they are worthy of praise and attention. But when we face the question of the city we already encounter one of the most complex systems that displays complex behavior. Analysis by simplification through this game is something that we cannot do lightly. SimCity constitutes a challenging stimulus to talk about cities and question its operation. But can we currently really test real world alternatives with this software?

The SimCity game, if not as widespread through the population as pop music, is certainly entering common language and producing observations from the layperson to the scholar. Tourist returning from Bangkok use SimCity to compare the brutality of the ruthless public infrastructure found there. Martin Kübler, a social activist now working in Dubai, mentioned how this location seems to him like SimCity par excellence:

“Most major decisions seem to be made in the spur of a moment by the Sheikh - for example, first there was only one artificial island in the shape of a palm tree. It was very popular with investors and thus it came that, when the Sheikh came to visit the building site, he decreed that there should be a second one. Building works started a few weeks later. Now that the second one is well under way, and equally popular, the Sheikh ordered a third one to be build on the other side of the town. His request was published in the newspapers on one day; bulldozers started to roll about a week later.”

Countless references can be found on-line developing similar comparisons. For instance, PghUSA on the Urban Planet message board posts:

“That whole country is like the world’s best SimCity player come to life. What 25 years of oil money can do (Houston and Dallas expanded this rapidly in the 1970s and 1980s too).”

Ultimately we will have to respond to these views and assess their accuracy regarding Dubai and other cities. But in any case, SimCity is used as the currency to explain and compare urban phenomenon and to illustrate diverse opinions. Kübler hints at a critique of the politics of Dubai and PghUSA praises its development model. Should we wish to understand systematically what makes these views converge on SimCity we would need to look at the political and economic models encouraged by the game and how these are reflected in reality. In this example, common points are the perception of rapid growth, a wealth of resources and a straightforward decision making process.

The current cultural position of the game is far from encouraging to use it thoroughly in educating or training professionals. Forgetting the irony and playfulness of SimCity in the classroom would equal to teaching civic behavior with fighting games such as Mortal Kombat, Quake or Tekten IV. Sinjin Bain, Executive Producer of the Sim’s expansion pack “URBZ: Sims in the City”, says that the URBZ is a parody of urban life much like the Sims is a parody of suburban life. I find easy to think of SimCity as parody of city development. The family of Sim games always had subtle ironic undertones that compounded experience with a witty sense of humor. As Hogan notes, “it is a game... we tend to pick and choose the stuff that makes for good game play”. In fact Bill Wright speaking about his creation says that, all games are designed to allow people to be destructive, but players have to realize that the true challenge is a constructive one. The trick for prospering in the games lies with learning about the underlying model. But, it looks like new versions of the game are making some moves

away from its founding sense of nonviolence and open ends. They add power-trip possibilities that would give a city planner a God complex-fine for a fun simulation, troubling for a game used as an educational tool in the real world. The latest expansion pack does more than over emphasize transportation and car dependence. In a return to Wright's original helicopter attack game, not only can players now demolish buildings from a tank, but they can also run "vehicle missions", which are available depending on existing development, funding situation and a desire to create or destroy. You want to run a mission to drive a toxic waste truck through the city safely? Or even help a group of robbers escape the police? Criminal actions by the mayor may hurt popularity rating, but if the mission is successful the money goes to the city treasury, offering greater possibilities to boost ratings. The mayor can drive his limousine to an area of low mayor rating, which might be under a strike or a revolt. Hold the space bar, et voila, the mayor is throwing bills from the limo that the Sims pick on the fly. The mayor's rating is restored. In some cities, of course, that scenario reflects reality. But shouldn't a game with so much influence on future planners and citizens not just teach power accumulation, but at least attempt to instill a sense of what government can and should do—some sense of values transcending simple supply and demand that underlie planning?

Not only the game does not dwell successfully in the complex but intrinsic elements of an open society and some of its pressing problems—citizen participation, voting, councils, legislation, homelessness, corruption or accountability—but it avoids entirely the increasing element of gaming interaction and simultaneous participation. At many levels the consolidation of the World Wide Web and the new technologies associated with it have enabled those with access an unprecedented level of connectivity and dialogue. On-line gaming provides users the possibility of sharing the same session with other users and shape the fiction as an outcome of group decisions. In the case of SimCity while it has developed an impressive following and many peripheral fan sites devoted to the game it has remained behind as far as multi-player interaction goes. Currently it only offers one option that limits the opportunity to develop team scenarios of collaborating or even opposing forces. A city can be shared on-line by passing it from user to user, from mayor to mayor, for a limited period of time. That is, borrow a city, see where it is at, push its development in a direction of your choosing and leave it when your term expires. This literal interpretation of mayoral terms is a far cry from allowing users to share a common project and test particular scenarios. This development, in addition to an access to the black box, would open new ways to explore conceptual city scenarios that, with the right framework, could start at SimCity helping us to understand urban environments better.

So, going back to the starting question, "Is it time – to be Mayor?"  
Yep, let's be mayor... After I get elected, of course.  
SimElections anyone?



## SIMCITY BASIC CHRONOLOGY:

- 1959 - Waldo Tobler outlines a simple model called MIMO (map in-map out) for applying the computer to cartography.
- 1964 – Richard Duke designs the simulation game “Metropolis” for the City Council in Lansing, Michigan
- 1965 - Event description SYMAP (Synagraphic Mapping System) - a pioneering automated computer mapping application developed by Howard Fisher at the Northwestern Technology Institute and completed in the Harvard Lab
- 1969 – Jay Forrester publishes “Urban Dynamics” pointing to data modeling in order to challenge urban policy practices. Environmental Systems Research Institute (ESRI) is founded by Jack & Laura Dangermond.
- 1972 – The Club of Rome publishes “The Limits to Growth”
- 1984 – Bill Wright creates his first game: “Raid on Bungeling Bay”.
- 1987 – Bill Wright and Jeff Braun found Maxis
- **1989 – Maxis SimCity is published for the PC and Mac.**
- 1990 – Geographic Information Systems (GIS) replace paper maps as the primary medium of map analysis
- 1990 Sid Meier releases “Civilization” inspired on SimCity. Maxis produces SimEarth (1990) followed by SimAnt (1991)
- **1993 – SimCity 2000 is released.** Spends the first half of the year at number 1, selling 300,000 copies in the first 4 months alone. SimFarm also released.
- 1995 – Maxis goes public. Witold Rybczynski publishes “City Life”.
- 1996 – Maxis releases SimCopter, SimTunes, SimPark, Full Tilt Pinball
- 1997 – Maxis is acquired by Electronic Arts Inc
- **1999 – SimCity 3000 is released.**
- 2000 – The Sims is released in February. The first expansion pack “The Sims Living Large” is released in August
- 2001 – The Sims “House Party” expansion pack is released in March. November sees the “Hot Date” expansion pack. Maxis also produces SimCoaster and SimGolf.
- 2002 – Two expansion packs for the Sims are released this year: The Sims Vacation and The Sims Unleashed. The Sims Online is also released.
- **2003 – Maxis publishes SimCity4 in January. The expansion pack “SimCity4 Rush Hour” is released in September. Both are also repackaged as SimCity4 Deluxe Edition.** The Sims is re-launched for console including the console expansion pack “Busting Out”. PC Sims’ expansion packs released are “The Sims Superstar” and “The Sims Making Magic”
- 2004 – The Sims2 is released in September. In its first 10 days, the \$49.99 game sold more than a million copies worldwide, more than 50% in Europe. The expansion pack “Urbz: Sims in the City” is released in October.
- 2005- The expansion pack “Sims 2 University” is released in February.

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