

Decentralized Street Light

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This essay focuses on streetlights as a public furniture and asks the question, is it possible to use a street light as an open medium?”.

Openness has a complicated background. Being open and open source is a representation of a collective management style which is like a Lego toy. Anybody can play and give a shape to it. The good side is, it is free and clear. As an example if somebody is drinking a open source soup, he knows exactly everything about the production and what is inside of it. And he has the ability to change the structure of the soup to cook a more personal taste or cook a very different soup. The philosophical background of open source issue has lots of examples. In the Star trek First contact ¹ movie, the character Picard who came from the 24. century answers a question from an other character Lily who came from the 20. century.

“No money? You mean you don’t get paid?”

“The acquisition of wealth is no longer the driving force in our lives. We wish to better ourselves and the rest of humanity.”

The movie uses Karl Marx’s Communism theory ² as a prediction to the future.

Karl Marx’s Communism theory and the open source philosophy which are focusing on the economical justice have a similar idea of management. The idea is, Mathematically the best management style for humans is to work for the welfare of the community. Which also means everybody should work for the community without personal welfares. Open source theory has a collective style of software development which has a similar idea behind it. The idea is to develop a source code of a software with modifications and new creations in a sharing pool like mutating software. The reason behind it, is to develop a software without a need of income so that the software will be free and easy to reach. The obscure thing about open source networks, is being an invention of military. If we take a look at the Protocol book of Alexander R. Galloway ³ there is a good historical and technical background of the internet which is an open source network.

Internet

“The most extensive “computerized information management” system existing today is the Internet. The Internet is a global distributed computer network. It has its roots in the American academic and military culture of the 1950s and 1960s. In the late 1950s, in response to the Soviet Sputnik launch and other fears connected to the Cold War, Paul Baran at the Rand Corporation decided to create a computer network that was independent of centralized command and control, and would thus be able to withstand a nuclear attack that targets such centralized hubs. In August 1964, he published an eleven-volume memorandum for the Rand Corporation outlining his research.

In 1969, the Advanced Research Projects Agency (ARPA) at the U.S. Department of Defense started the ARPAnet, the first network to use Baran’s packet-switching technology. The ARPAnet allowed academics to share resources and transfer files. In its early years, the ARPAnet (later renamed DARPA net) existed unnoticed by the outside world, with only a few hundred participating computers, or “hosts.” All addressing for this network was maintained by a single machine located at the Stanford Research Institute in Menlo Park, California.”

1. Star Trek, (1996), http://memory-alpha.org/en/wiki/Star_Trek:_First_Contact

2. Communism,(2009) Wikipedia, December, 11, 2009, <http://en.wikipedia.org/wiki/Communism3>.

3. Alexander R. Galloway (2004): Protocol: How Control Exists after Decentralization: London. p. 4-5.

Since the foundation of ARPAnet internet is alive and it is growing really fast with new technologies like wireless mobile protocols which are generating new information networks like 3g⁴ Internet is open source, reliable and everybody is equal over internet for 40 years.

At this point there are dangerous issues about the structure of Internet. In the old anime serie Laserion (1984)⁵ the main character Takashi and his friend living in New York are playing a game over a global network. But there is a some kind of restriction with the network and they are playing the game by hacking the military network because they can't connect to each other directly. The game has no interface and they are playing it by typing mathematical codes. After a time an accident occurs and somehow Takashi's robot resurrects at the military base and the story goes on. The restrictions in the scenario, the restrictions over internet now and the network mechanism of the street lights have the same principle.

The relationship between disconnected hub and the street lights

As How Stuff Works⁶ website writes, street lights are working like individual clients on a network which are opening themselves at night and closing in the morning. They are using a very basic artificial intelligence⁷ with their light sensors. But if the hub cuts the electricity they will be all turned off. It is similar to the root servers on a network. As Paul Garrin⁸ writes: "With the stroke of a delete key, whole countries can be blacked out from the rest of the net. With the "." [root file] centralized, this is easily done. . . . Control the "." and you control access."

To prevent the danger of being centralized and being a centralized society, G. Deleuze (Postscript on the Societies of Control)⁹ hypothesized that "the key thing may be to create vacuoles of noncommunication, circuit breakers, so we can elude control.". The vacuoles could relate to the distributed networks. The principle of distributed networks differs from the centralized and decentralized networks as Alexander R. Galloway writes

"A distributed network differs from other networks such as centralized and decentralized networks in the arrangement of its internal structure. A centralized network consists of a single central power point (a host), from which are attached radial nodes. The central point is connected to all of the satellite nodes, which are themselves connected only to the central host. A decentralized network, on the other hand, has multiple central hosts, each with its own set of satellite nodes. A satellite node may have connectivity with one or more hosts, but not with other nodes. Communication generally travels unidirectionally within both centralized and decentralized networks: from the central trunks to the radial leaves.

The distributed network is an entirely different matter. Distributed networks are native to Deleuze's control societies. Each point in a distributed network is neither a central hub nor a satellite node—there are neither trunks nor leaves. The network contains nothing but "intelligent end-point systems that are self-deterministic, allowing each end-point system to communicate with any host it chooses." Like the rhizome, each node in a distributed network may establish direct communication with another node, without having to appeal to a hierarchical intermediary. Yet in order to initiate communication, the two nodes must speak the same language. This is why protocol is important. Shared protocols are what defines the landscape of the network—who is connected to whom."¹⁰

4. 3G, (3009), <http://en.wikipedia.org/wiki/3g>

5. Laserion,(1984) imdb, <http://www.imdb.com/title/tt0159928/>

6. How do the streetlights turn on automatically at night? (2009): how stuff works, <http://science.howstuffworks.com/question363.htm>

7. Artificial intelligence (2009), Wikipedia, http://en.wikipedia.org/wiki/Artificial_intelligence

8. Alexander R. Galloway (2004): Protocol: How Control Exists after Decentralization: London. p. 10.

9. On Control Societies: A Deleuzian Postscript, Jia-Lu Cheng (2008), London, p22.

10. Alexander R. Galloway (2004): Protocol: How Control Exists after Decentralization: London. p. 11.

The hub servers on a distributed network can relate to the “vacuoles” or “circuit breakers” because even if the root server deletes a hub server, the hub server and its clients still stand with each other and they stay connected to the network. These circuit breakers also share the same metaphor with the decentralized street light. But is it legal to use the street lights like an open source mechanism at the public spaces?

Public space

As wikipedia writes Public space ¹¹ is a space accessible to all citizens, regardless of gender, race, ethnicity, age or socio-economic level. It is a free space that anybody could use which doesn't require any reason or mission. It is a social space to live with other people.

Public spaces are mostly the streets, town squares, parks, government buildings. Some buildings and spaces like parks and government buildings have restrictions and protocols.

Public spaces are shared for the open usage of the community but as Wikipedia writes generally the street lights around the world are being controlled by centralized systems which means, the citizens are not allowed to operate them with their own will. Ethically it is possible to use street lights as an open source medium but it is illegal.

Beyond being illegal there are other usability problems. The main problem is being open to everyone. Being open means giving the control of the street lights to everyone. The scenario can be chaotic because everybody is sharing the same light source but there is only on or off option. There are endless possibilities about the situations that can happen because it is unexpected and new. The first reactions will be the same with the street art experiences. Hakim Bey ¹² has a good explanation for street art.

Street art : Poetric Terrorism by Hakim Bey

“Go naked for a sign.

Organize a strike in your school or workplace on the grounds that it does not satisfy your need for indolence & spiritual beauty.

Graffiti-art loaned some grace to ugly subways & rigid public monuments--PT- art can also be created for public places: poems scrawled in courthouse lavatories, small fetishes abandoned in parks & restaurants, xerox-art under windshield-wipers of parked cars, Big Character Slogans pasted on playground walls, anonymous letters mailed to random or chosen recipients (mail fraud), pirate radio transmissions, wet cement...

Dress up. Leave a false name. Be legendary. The best PT is against the law, but don't get caught. Art as crime; crime as art.”

The definition of open source and the participation model have a similar model with the street art. The act of street art is a participation model of artists gathering on the streets. The participation can be a group of people or a individual person. The way a software developer plays with an open source software has a similar act with an artist playing on the streets using the environment and elements of the street to express himself.

Street art can be defined as an open source media without a license because street art is open, although illegal. Considering street art as an open source media, it is possible to take examples for troubleshooting and stress test.

11. Public Space,(2009) Wikipedia, December, 11, 2009, http://en.wikipedia.org/wiki/Public_space

12.Hakim Bey, Poetric Terrorism , http://www.woostercollective.com/2004/01/what_the_hell_should_we_call_i.html



Photo 1.1
Jeremy Lynch



Photo 1.2
Eltono (the politono stealing action)



Photo 1.3
Scott Wayne (horse project)

Stealing and giving damage

Street artist Jeremy Lynch¹³ makes sculptures from 35mm film containers and plastic figures. He sticks them on the streets of Berlin and Toronto. He says if somebody finds one of these toys on the streets, a sense of discovery involves and that leads to steal it. But the word “steal” has a problem with the meaning and he gives an explanation for it “If the work stays up, is taken down in disgust or heading for someone’s collection, it makes no difference to me. I have no control; it’s street art!”. An other example is from the streets from Madrid by Eltono¹⁴. He makes geometric sculptures called Politono and puts them on the streets which people are not used to see it. He explains his artwork as “The meaning of the artwork is “open your eyes and observe”, “love your neighborhood”. He records an action of stealing of a sculpture. He says “The Politono got stolen and I recorded the whole action, it was so exiting!!!”. From the examples, these two street artists are accepting the act of stealing normal. The public can consider the street like their natural habitat. If somebody disturbs their habitat with putting a statue, it is their right to steal or remove it. This is more like being in peace with the environment and the people. Stealing could be considered as a natural act but it is possible to build a secured artwork. The street artist Scott Wayne¹⁵ from Portland makes installations with small horse statues tied to the brass rings which are embedded in different parts of the city. He ties the horse statues with a metal stripe. Thus the stripes make it difficult to steal the horse statues. On the other side securing an artwork on the streets is not ethical because it is possible to ask and argue about who owns the artwork? Securing an artwork can lead to discomfort for the people. At the diary of Scott Wayne’s horse project there are photos of broken horses. It is possible to consider broken horses as a reaction to security.

13. Jeremy Lynch,(2007) <http://www.jasherlynch.com>, <http://www.woostercollective.com/3d/>

14.Eltono, *The Art Of Rebellion* (2004), p. 26-27

15.Scott Wayne, *The Horse Project* (2005), <http://www.39forks.com/39pages/projects/Horse/HorseMAIN.htm>

The control of the light

An other problem with the Street light is “who will control the street light?” There can be lots of struggles between people to control it. The usage of the street light can be a local problem or there can be a local reasoning to control it. But is it good to be autocontrolled with light sensors and the electricity system or is it good to give the control to everyone. The Japanese anime *Rojin Z*¹⁶ has a good scenario about it. The story takes place in Japan. The Japanese scientists working collaborative with USA government, are designing a machine to assist the senior citizens. The machine is like a multi functioning bed. When a senior citizen sits on it, the machine feeds him, controls his health, give medicines, connects to Internet for news, games, etc. The bed does everything a senior citizen needs. The controversy thing about the bed is, it is working with nuclear power. Meantime the main character who lays on the bed, wants to get out of the machine but the government uses him as a test object and doesn't allow him to go out of the bed. After a time the main character becomes connected to the machine and creates a virtual spirit of his dead wife and uploads it to the bed. He starts to use the machine like a fighting machine and later on the audience understands that the machine is made for military purposes and the government calls a mecha, using the same technology from usa to fight with him. The Scenario is related to the soup example. If the citizens know how to use the light and what is inside of the light technically, they can produce a local control system and if a problem occurs anybody can solve the problem. Also it is possible to improve or upgrade the system technically by the public.



Photo 1.4

Emr3 collective work with Cins

Improving the medium

There is a good example from Turkey about improving an urban illustration. Emr3¹⁷ is a friend of mine living in Turkey. He is painting graphical illustrations on the walls with stencils, duck tapes and other experimental tools he found. After he moved his house to a new territory, he started painting new illustrations on the walls. After a time we recognized that other street artists were working collectively with him without knowing him. He was painting an illustration on the wall and after a time some other street artist was painting an other illustration on it because Emr3's illustration was like a base structure to paint on it.

16. *Rojin Z*,(1991) imdb, <http://www.imdb.com/title/tt0102812/>

17.Emr3, <http://boyaboyuna.blogspot.com/>

It was like an open medium texture which creates a charming surface for the graffiti artists. Thus his illustrations were becoming much more richer and from an outside view the illustrations were looking like they were made by just one street artist. The good thing about this anonymous collective work, they started to search for each other in the territory and after a time they became like a big crew of street artists in Istanbul. Now they are using the walls like an open source medium and they are doing illustrations all together. Considering decentralized street lights as an open medium, it is possible to improve the design of the street lights individually.



Photo 1.5
Gilberto Esparza (urban cancer project)

Examples of Street light modifications

There are several examples of street light modifications from the world. The first example is from the Urban cancer project by a Mexican street artist Gilberto Esparza ¹⁸. He usually focuses on the materials which has protocols and restrictions like road lines and street lights. His street light project is like an organic, mutated cancer cell of the city. His street light modification has lots of heads of lights which is like a disease growing on a street light.

The second project is from Gregory Witt ¹⁹ who attended to the Art in Public: Expressing Youth Voices in Pittsburgh competition. His project is about a street light which deploys sound instead of light. His street light has a neck with an automated 4 axis motor. The street light is like corrupt puppet which can turn its head and talk to the people. His creation is like a twisted tale character which lives like a person on the street.

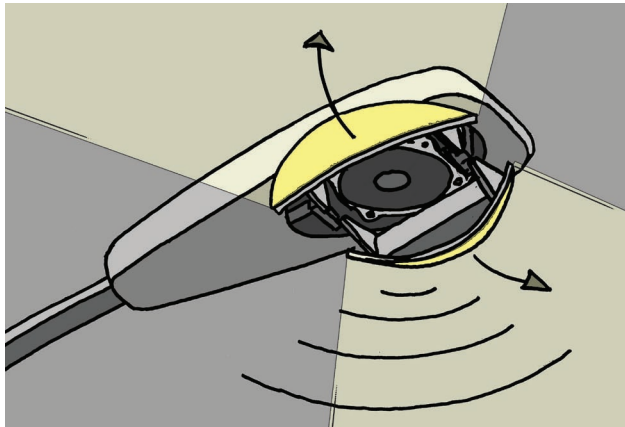


Photo 1.6
Gregory Witt

Conclusion

Considering street lights as a natural furniture of the streets, it is possible to use the street lights as an open medium. It is possible to modify and improve it. Also it is possible to see it as a street art object which has a methaphor of being a short circuit on a centralized network.

18. Gilberto Esparza(2007) <http://gilbertoesparza.blogspot.com>

19.Emr3, <http://boyaboyuna.blogspot.com/>

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