ELUSIVE BORDERS

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Whether portrayed as borders, boundaries, or frontiers, it is often by reference to political geography that borders are conceptualized (Basaran). In a legal understanding, borders are in constant transformation, negotiation, and contestation as they are settled by enforcement rather than geographic stability. When compared to a mathematical definition of space given as a geographic boundary between two entities, e.g. the Euclidean or Newtonian definition, a distinct quality of the border is made visible: One can be at the doorstep of Europe, metrically only a few meters from touching the soil of a European country. Yet the political border forms an even more fundamental spatiality, which is possibility. In Euclidean space, two locations might be proximal to one another, but because of the presence of fences and borders, it can be difficult to reach a particular location.

Approaching this paradoxical relationship between the different meanings of borders, I propose the notion of gravity as Levi Bryant uses it. Through an analogy to Einstein's theory of relativity, Bryant suggests the notion of gravity to denote how semiotic and material entities influence the becoming and movement of subjects and collectives in time and space (Bryant 10). I use these thoughts to delve into the borders of the digital, as I will investigate the shared space between physical and digital borders. The objects of the analysis are two artworks that in two very different ways approach the physicality of borders.

Constituting a space-time of the information flow

Nina Canell's subterranean cable project is the first example of an artistic practice investigating the physicality of digital borders. Included in this project is the series Mid-Sentence and Shedding Sheaths, both from 2015. Canell's practice takes its basis in subterranean cables of different sorts: Fiber-optic cables used for long distance telecommunication or for providing high-speed data connection between different locations, electricity and communication cables, as well as a variety of sheathings, designed for applications, e.g. in power lines. The works allow the viewer to perceive normally imperceptible dimensions of reality, as the aesthetic disruption exposes the hidden media of energy flows.

In continuation of the subterranean cables series, Canell has transformed her website into a route tracker exposing the network information and length of cables used for transmitting her website data. Following Bryant, one could regard the cables as path systems enabling or excluding flows of data or electricity to transfer from one part of the world to another. Loading the website, one becomes aware of these paths as the cables involved in the transmission of the data are uncovered. Without the complicated network of cobber and plastic sheathings, there would be no flow of information, or as Levi Bryant puts it, space-time does not pre-exist things, but rather arises from things (Bryant 12).

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Metadata

An illustrative example of a contrasting piece could be the well-known Autonomy Cube made by Trevor Paglen and Jacob Appelbaum. Several Internet-connected computers create a Wi-Fi hotspot anyone can join as all Wi-Fi traffic is routed over the Tor network. Tor encrypts the metadata surrounding the actual content of the information sent. The data is encrypted several times, and is sent through a random selection of Tor relays. Each relay decrypts a layer of encryption to reveal only the next relay in the circuit in order to pass the remaining encrypted data on to it. The final relay decrypts the innermost layer of encryption and sends the original data to its destination without revealing, or even knowing, the source IP address (torproject.org).

The notion of metadata is of importance here. The metadata constitutes the milieu of the content revealing the surroundings of the data. This 'data about data' is crucial as it emphasizes the material aspects of the data production. We have a tendency to focus on the aboutness of messages, when we talk about transmissions between entities, forgetting that these signs are not simply about something, they are something as well (Bryant 20). For the activists behind the Tor movement it is the metadata that gets attention; it is context rather than content that is of importance.

Metadata is both the cause of and the solution to the problem: Whereas a normal router would use the shortest way from A to B using the metadata to decide the most efficient path, the Tor router uses a random path leaving no trace and no metadata, as it is continually peeled off. In dealing with the problems of privacy, the people behind Tor use the virtual space to overcome the problems of proximity, but at the same time adopts the benefits of the physical space by avoiding any traces. In this way, Tor's use of metadata can be seen as a mediator between two kinds of spatialities, it determines the direction of the message in physical space being a kind of envelope for the mailing system, but it does so based on a principle of randomness sustaining a borderless space. Whereas Canell's subterranean cable project exposes the infrastructures of the data transmission providing transparency and accuracy, Autonomy Cube uses the opportunity of secrecy exploiting the limited infrastructures of the physical space to create an autonomous and borderless space.

Elusive borders

I will conclusively return to the opening question of law and mathematics in relation to borders. Space, as we perceive it, is not an operational input for a machine. It can only process metadata, and thereby suggest a location of a server. The computational formation of borders is mechanical: With 100% probability the computer can determine an exact location that does not happen to be yours. If Canell's website is loaded through a Tor relay, the route tracker will suggest locations and cables from all over the world. Metadata points to a locality somewhere in the global network of thousands of volunteer-run servers and relays, and thereby it becomes both the repression of this narrative and its emancipation; both the physical space with fences, walls, and barriers, and the borderless, un-surveilled, un-tracked space.

The infrastructures of cyberspace are just as restricting, forming, and determining as the borders and walls in physical space, because they are deeply integrated in the infrastructures of everyday life. The two artistic practices both expose the physical and digital infrastructures, which constitute the network albeit in two different ways: Whereas Canell's cables embody a surgical dissection of the body of a network no longer functioning; Autonomy Cube is a work of flux as it shows the process of the infrastructure as a running printing press connecting, transmitting, and receiving. Autonomy Cube inverts the process enabling Canell's website to track the entire scope of the physical infrastructure used for sending a package from one destination to another. In this way, the artwork operates as a mediator between physical and digital spatialities exploiting precisely this intersection.

References

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