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Airports as an encoding/decoding device: a semiotic analysis of a designed space

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Airports environments are designed to maximize certain desired behaviours from passengers: disciplined queues at security barriers but also "impulse purchasing" from "captive customers" in shopping areas. To a semiotic analysis this can be observed at the syntactic, semantic and pragmatic level. At the syntactic level airport architecture is made of strong separations (eg. airside/lanside opposition), barriers, areas of flow and stagnation; at the semantic level it's dense with meanings deriving from the syntactic organization: freedom, security, overlapping sovereignties and globalized surveillance; at the pragmatic level, there are some airport-specific feelings and conducts being experienced and introduced, ready to be reused in non airport-contexts wherever the same semio-syntactic organization is being reproduced, whether at mega-events or Ikea shops. In particular we see that the bodily discipling required by security checks and the managing of passenger flow is combined with impulse purchase. Along this view, airports can be seen as an experimental context where conducts are decoded and encoded, a principle of vision and division («structure structurée» for Bourdieu) but also also a «structure structurante», at the intersection of a norm of discipline and norm of regulation taking in charge both the Foucaultian regulation of population and the discipline of bodies.

***Keywords**: airport, airport design, regulation, semiotics, security, code, space*

Introduction

In the words of Lucas, the architect of prisons Lucas cited by Foucault (Foucault, 1975): the intelligence of discipline has to be *embedded in stone*.

> *[…] le rôle de l'architecte est entièrement changé; c'est un problème moral qu'il doit opposer aux tentatives de l'évasion; il lui faut, pour ainsi dire, faire passer dans la pierre l'intelligence de la discipline, et enfermer les détenus bien moins sous l'épaisseur des verrous que sous l'œil de la surveillance* (Lucas, 1836).

The architect has to oppose a moral challenge to the prisoner, subjected to surveillance more than enclosed by walls and locks. Applied to airport design, the

disciplining of passengers can take at least two of many meanings, the first being that of Foucault's disciplinary state (Foucault, 1975), the other being that of a regulating environment, what Foucault (Foucault, 2004, 1997) calls a milieu. When they are not explicitly instructed by explicit discipline, as in queues at security checks, passengers voluntary behave in some way that is strongly suggested by the architectural environment.

Organizing the airport space around two processes, flow and stagnation, makes use of one single effective device to encode behaviour, described by the theatre metaphor. Airport is a demonstration space of security measures (Schneier, 2008) and the stage of commercial spectatorship (Adey, 2007). Both themes, security and commerce, are recognised imperatives for current airport design and operation (Adey, 2008).

Travellers or captive customers?

Airport architectures rely on the ability to draw the field where the multiplicity of actions take place, and thus limiting the scope and kind of actions that *can* take place or that *probably will* take place. Passengers *have to* cross security checks between land-side and air-side parts of the airport, and then *probably will* spend time in the shops area, where they are "captive customers": they are have to spend time before or between flights in a constrained space where shopping is one of the very few options to boredom.

The highs and lows of a "travel stress curve" (Scholvinck J. 2000, in Crawford and Melewar, 2003) induced by security checks followed by waiting may bring to a higher probability of *impulsive spending*, provided that the shopping environment is designed in an appropriate way (Volkova, 2009). The release of stress level induces purchase: passengers are more likely to shop after passing through airport security control than before. For this reason most shops are located "air-side", (i.e., past the security barrier), rather than "land-side", even if security reasons would suggest exactly the opposite. Independent security researcher Evan Booth demonstrated it's possible for terrorists to build lethal weapons using only items for sale at the shops beyond the security checkpoints (Booth, 2013; Flaherty, 2013). An environment that facilitates shopping is of great importance in airport design, given that retail is the largest single non-aeronautical revenue source for airports accounting from 30% to nearly 60% of income (Graham, 2009); moreover impulsive purchasing in airports outperforms other reasons for buying (Geuens et al., 2004). Airports should adopt strategies to foster impulsive purchasing, which is object of constant research (Adey, 2008; Crawford and Melewar, 2003; Omar and Kent, 2001; Sulzmaier, 2001; Torres et al., 2005; Volkova, 2009). Adey (2008) has also pointed

out that the activation of emotive and affective unconscious motions push passengers towards consumption behaviour.

Semiotic analysis of airport space

The process of encoding behaviour into the communicative environment that Lucas was referring to can be classified along three main divisions, following the three factors of the semiotic process conceived by Morris (Morris, 1946): *syntactics*, *semantics* and *pragmatics*. Signs are classified according to their relation to other signs (*syntactics*), that which the sign refers to (*semantics*) and their interpreter, in this case people (*pragmatics*).

Syntax

First, we have space syntax, or architectural code organizing buildings, functional spaces and artefacts that shape the the form of the environment and the relation between its structural elements. Moreover, airport security and flow management is filled with distinctions explicitly encoded by labels: Arrivals/Departures, US/non-US or EU Shengen/Non-Shengen citizens, national or international, passengers with or without checked-in baggage, opting-in or out of scanning machines, and so forth. All distinctions are reflected in architectural arrangements: gates, barriers, delimited areas, differential queues and accesses, screening points and information points. International airports are political border spaces, even if they are well inside national limits, giving them a unique statute in the geo-political national space syntax. Adey (2007) shows how airport planners use *spectacle* dynamics to control passengers mobility, intending to achieve a relative immobility, thus preventing wandering and encouraging them *to take up a particular position, through the practice of spectatorship, mediated by the technological and architectural assemblages of the terminal building.* This is obtained in various ways: modulating the access to windows open to the exterior, where the spectacle of planes unrolls, and also to shop windows; designing access to the spectacle of other passengers and the *drama* of their stories taking place in public; engineering access to information, mainly through flight information displays where people gathers, and TV screens that *hold* people in place; and finally through the positioning of sitting places that promote a certain cellular individuality and prevent sleeping. This complex spatial organization of passengers as *constant spectators* maximizes their exposition to retail opportunities (Adey, 2007). As we have seen, the most significant syntactical element is the security (for departures)

or immigration (for arrivals) barrier, paradigmatically opposing the air-side from the land-side part of the airport. Positioning the shops air-side or land-side may have dramatic consequences on security or commercial income for airports. The way the scenic design is built influences the type of representations.

Semantics

Second we have the semantics, all that gives sense to the syntactic articulation and shapes the informative environment. Not only signs, informative codes and announcements, orienting passengers in their moving or staying, linking them to specific spaces (arrivals, departures, gates etc.), but also the meaning of these spaces and the sense of their articulation.

The airport is a place of contradictory semantics, where contrasting meanings coexist. Salter discusses the main definitions and metaphors of the airport, and opposes the *non-place* (Augé, 1992) or *spaces of flows* (Castells, 1983) views. Instead he considers the Airport as a foucaultian *heterotopy,* because of the coexistence of apparent contradictory aspects of opening and exclusion, aggregation and isolation. Salter analysis leads to the *disaggregation of sovereignty and territory, the importance of confession and surveillance at the airport, and the hidden dynamics of airport security screening* (Salter, 2007). For sure airport is an iconic space for freedom. Freedom of movement everywhere in the world, freedom from gravity pull and often a space that frees us from the sovereignty of a State. But this freedom is reached only after paying an high price in terms of privacy an individual autonomy: airport gates and security areas are signalled by armed guards, warning signs and above all surveillance devices; closed circuit cameras, body scanners and biometric identification systems, ranging from fingerprints to face recognition and iris scan.

Investigating the meanings of the security arrangements bring more surprises. Is the security arrangement in airport effective? Does it means what it says?

After the 9/11 events, security has become one the of the most important aspects of air travel. Air security is a very complex matter. Scholars describe 20 layers of security, whose responsibility is split between airport, airline and government authorities (Seidenstat, 2009). United States are leading the effort in improving airport security with direct government involvement, decided under the assumption that market would fail if security business is left in private hands (Seidenstat, 2009).

As a consequence, Transport Security Authority (TSA) was charged with some of the crucial tasks of airport security, including passengers screening. The effectiveness of the measures taken by TSA has always been harshly criticized;

despite the money spent, the collaborative spirit of the American public and the extent of powers given to the Agency.

> Early in 2005, two separate reports were made to Congress, [...]. Based on testing of airport screening operations, both concluded that there was no evidence that screening performance […] was better that it had before the TSA put its own screeners into airports. In other words, this new agency with a budget of $5.5 billion per year, [...], has not led to demonstrably improved protection of planes from dangerous objects (Poole, 2009, p. 267).

According to security expert Bruce Schneier, who elaborates on the low effectiveness of airport security measures, passengers are engaged in a representation where they are the unwilling actors on the stage of a *security theatre* devised to *make people feel more secure without doing anything to actually improve their security* (Schneier, 2009).

> Security is partially a state of mind. If this is true, then one of the goals of a security countermeasure is to provide people with a feeling of security in addition to the reality. But some countermeasures provide the feeling of security *instead of* reality. These are nothing more than *security theatre*. They're palliative at best (Schneier, 2003, p.38)

Among the many ineffective technologies and procedures, Schneier lists: photo ID checks, armed troops (with no ammunition) stationing out of airports, colour-coded system of threat levels, harassment of photographers, ubiquitous metal detectors, and specific measures against what the terrorists happened to do last time (Schneier, 2009), including ban on liquids and shoe removal.

Security reasons behind provisions, architectures, prescribed behaviours and barriers do not hold rational scrutiny. Their goal is to display a power that reassures by being very evident and to foster a perceived sense of security. It's not what these measures do, it's the way they are represented on a scene that makes them politically effective. What do they represent? What are their meanings?

In the first place these devices are sign and memory of the offence of a sovereignty: anyone being subjected to these measures will remember why they have been established. Throwing away liquids and taking off shoes are liturgical gestures that renew the memory of the tentative terrorist attacks they are connected to. Secondly, anyone being compelled to unusual or embarrassing acts

acknowledges the power of those who prescribe them: it's a submission act. In the third place, this power can be measured by the amplitude of the distance from the prescribed behaviour an the socially accepted one. When we are standing in a queue stripped of shoes, belt and jacket, holding a bag with toothpaste and shampoo in one hand and a passport with our fingerprints in the other, heading to a machine that sees through clothes, we are behaving in a way that is so distant from ordinary conduits that it makes extremely tangible the fact that there is a power, and that power is vast. And at last, the persistence of these measure, the fact that they are not revoked even if unpopular and ineffective, measures the weakness of the forces that oppose them (Cammozzo, 2010). The terrorist attack on state sovereignty is countered reaffirming a disciplinary power in an indiscriminate, dramatic and theatrical sight where the security check is the stage and actors are passengers and security personnel. The plot requires a strict respect of forms and forms of respect, excluding any lateral possibility, that declares a most natural manifestation of submission (Bourdieu, 1972).

This attitude has been analysed by Salter who sees the airport as a political space where a confessionary complex facilitates the self-policing of individuals:

> *The power of the state to expel or exclude any traveler, even citizens with no cause or appeal, is internalized into an anxiety of the confession […] The sovereign's power to admit or exclude is manifest in the necessary anxiety of confession to produce the national subject. […] Through the passport, the visa, the customs declaration, our testimony before the customs and immigration official, we tell the story of ourselves that defines us as docile, obedient sovereign subjects* (Salter, 2007).

Salter also warns that the acceptance of confessionary self-policing both leads to greater intrusions into privacy and liberties and to the expansion of interrogators.

Pragmatics

And third, pragmatics, real codes of behaviour, oriented at persons through the building of the affective and emotive environment, influencing their motivations, their ability and willingness to perform certain actions like questioning security officers, wander through the airport, try to build relations or rather go shopping.

When performing at the security barrier theatre, we accept to keep the peculiar behaviour required by a peculiar environment, and we yield to an authority

believing there is a substantial common good at stake, "security reasons". These behaviors, once introduced, may be recalled when a similar syntactical ans semiotic environment is reproduced. When we meet the same elements (queues, soldiers, metal detectors) in a similar spatial syntax and within the same semantics ("security measures") we are encouraged to behave in the same way or to accept the same technological surveillance apparatus. This can be observed for instance at sport mega-events (Whelan, 2013). The spectacle of passenger processing is one of voluntary submission and body disciplining. The critical boundary of security checks is a peculiar environment where well-established social codes linked to socially relevant differences like sex, age, origin, and even disabilities are cancelled, and where other codes, very distant from socially prevailing ones, are introduced.

Adey (2008) goes one step further, calling our attention on another property of the environment, developing an understanding of airport architecture as a situational affective context that lays down root textures and motivations for movement and feelings, considering that affects emerge from relations between bodies. He notes that affectual cues such as texture, feel, lighting, are designed-into spaces to create ethological capacities and potentialities of affectual expression. Airports are products coming from a calculative and predictive thinking applied to emotions, both for security and commercial purposes. Different – often opposed – methods are used, but the intention is to induce specific moods in passengers. This includes shaping traveller flows so that architectures give passengers no options or, in security areas, that the emotional state of the passenger is meant to literally close-off the passenger's capacity to disrupt the security processing system through, for example, walking the wrong way, or by telling a joke or misbehaving. This is the kind of design that has been observed also in Ikea shops, according to space syntax analysis research (Penn, 2005, 2003).

Coded, decoding and encoding environment

Environment as a mean or factor of behaviour regulation of living beings recurs in history of biology, and Canguilhem (2008) described the history of the concept of milieu. Sometimes the environment is considered a passive theatre of the struggle for life of individuals, other times it's the main factor for any vital movement, with life completely determined by its environment., Canghuillelm writes:

> *The milieu of behaviour proper to the living (Umwelt) is an ensemble of excitations, which have the value and signification of signals. To act as a*

> *living being, a physical excitation has not only to occur but also to be noticed. Consequently, insofar as the excitation acts on the living being, it presupposes the orientation of the living being's interest; the excitation comes not from the object but from the living.* (Canguilhem 2008, p.111).

This approach introduces the signalling value of environment and opens the semiotic backstage of the theatre. The semiotic value of an environment lies in the decoding capacity of its inhabitants. How will passengers behave in presence of given signals? Ho will they respond? This allows us to analyse the airport as a two-phase decoding and encoding semiotic behavioural system. First, in a decoding phase, passenger's behaviours are observed and studied in relation to signals present in the environment, in order to detect what are the signals that passengers respond to. Second, probable correspondences between signals and behaviours are revealed. Third, in an encoding phase, the environment is altered to induce some desired behaviour. This pattern, corresponding to a scientific experimental set-up, is evident in the empiric literature surveyed so far (Adey, 2008; Crawford and Melewar, 2003; Geuens et al., 2004; Omar and Kent, 2001; Schultz and Fricke, 2011; Torres et al., 2005). These codes, that is, correspondences of signals between themselves and between signals and meanings and signals and behaviours, have a triple function: descriptive, explaining meanings and behaviours in response to signals; prescriptive, regulating behaviours with signals; and predictive, framing the probability of behavioural events in a given signalling environment. This triple function is characteristic of codes (Cammozzo, 2012).

The milieu and power

Foucault, in his courses *Sécurité, territoire et population* (Foucault, 2004) and *Il faut défendre la société* (Foucault, 1997) described the power of regulation coming from the environment, using the concept of *milieu*. He describes it following what Canguilhem registered in 1965, as the overcoming of contact and impact (*le contact, le choc*) as mode of action, introducing *action at a distance* as a new mode. For Canguilhem the *milieu*, as a fluid (like *ether* for Newton), solves the problem of action at a distance in physics (Canguilhem, 2008), while for Foucault, it solves the problem of *political* action at a distance, that is, of power. With action at a distance, there's no need to restore sovereignty reaching individual bodies with punishment or the disciplining of individual behaviours in a coordinated whole, as in *Surveiller et punir* (Foucault, 1975). The *milieu* of cites of the XVIIIth century is the support and element of circulation of an action: it's a constituent part of an urban environment, a pragmatic structure in which natural and artificial data affect the mass of people in a given field. The *milieu* is a *field of intervention* where individuals are reached as

a population instead of an ensemble of individuals that could be object of disciplinary performances (Foucault, 2004). Instead of using juridical code targeting disciplined subjects of right (*sujets de droit*), the population is reached through events of a *nearly* natural type that occur around them. The sovereign is he or she who has the ability to perform such interventions. One of the most significant interactions is precisely between freedom of movement and security devices (*dispositifs*) (Foucault, 2004). The *norms,* in this context, become what could be applied to a disciplined body or to a regulated population. As a complement, a *society of normalization* sees the intersection of a *norm of discipline* and *norm of regulation* (Foucault, 1997, p. 255), taking in charge both the regulation of population, and the discipline of bodies. In this perspective, the experimental environment of the airport, embedding all these elements, prefigures a dystopian society of normalization where no residual element of intervention on space is left to the community, and everything is (or could be) planned and coded.

Natural or built?

The key element here is the *naturalization* process. While discipline and punishment need a constant communicative effort, an incessant signalling activity to drive the subject's actions, an *environment* can embed all the signals it needs to regulate population behaviour with a much lower effort, because they are perceived as natural, as the *world as I find it, even if this world as I find it is a world that others have made* (Lessig, 1998). Signals are encoded in the architecture of the environment and decoded by individuals that – as a population (that is, statistically) – performs actions according to embedded codes. In that sense, objects, specially complex technological artefacts, not only have politics (Joerges, 1999; Kapor, 2006; Winner, 1980), but also have an *embedded normativity* (Brey, 2000). In airports, disciplinary security areas need constant effort of surveillance personnel that controls individual compliance to discipline and enacts the security theatre, while in the commercial space the desired behaviours are obtained probabilistically, but "naturally", via embedded signals present in the environment or transmitted with the behaviour other people. In the first case, the performance has to be actively directed against natural codes forcing desired but unnatural behaviour, while in the other it goes on induced by the setting of the scene, relying on natural behavioural codes.

The different nature of security barriers and commercial spaces reflects into communication, signalling and code differences. In one case, security checks spaces

emit explicit signals to force unusual behaviours with alien codes. Foucault describes this experience as placing the subject in a *small signalling world,* where to each signal corresponds an action according to a pre-arranged code (Foucault, 1975). In the second case, commercial spaces, the environments embeds (as it is programmed with) codes that are already present (at least statistically) in the population, and that are used to trigger a wanted shopping behaviour. It's a wider signalling world where signals induce probable actions based on “natural” codes.

Paradoxically, a really “natural” environment is the one that a living being, especially a human being, can contribute to shape, not one whose signals are disciplinary or follow an hidden agenda.

Conclusions

This article analysed the syntactical articulation of spatial elements of an airport, their connection with signals bearing a load of meanings (semantics) and the overall impact on behaviours (pragmatics) to decode the codes embedded in spaces. This analysis revealed some unexpected articulations around the security barrier, exposing “naturalized” codes, the ones that are sunk into things and we believe that are unavoidable, are in fact coming out of choices expressing some sort of power, may it be explicit or subtly linked with the detailed planning of an environment.

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