Designing for social friction: Exploring ubiquitous computing as means of cultural interventions in urban space

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ABSTRACT

As ubiquitous computing emerges in our lives and cities new opportunities for artistic and otherwise cultural interventions in urban space follow, but so far not much work has been done in order to articulate the socio-cultural significance of these new opportunities. This paper is part of a general attempt to develop a coherent understanding of the implications and potentials of ubiquitous computing in the context of everyday city life.

On a more specific level the paper examines how the notion of *social friction* can be helpful in the development and analysis of ubiquitous computing in relation to art and design. Social friction is articulated as a critical position, which could be applied as a *strategy* for design. Our approach consists of a theoretical analysis and precedes concrete development and real-life experiments. As such the paper aims to establish a steppingstone from which to launch actual digital designs.

We argue that by designing for the social friction, which is an intrinsic characteristic of everyday life, new forms of social and cultural potentials can be released. By means of discussing CityNova, a vision for a possible use of ubiquitous computing in urban space, we explore how this approach might lead to systems that create new ways of experiencing the city.

KEYWORDS

Social friction, CityNova, ubiquitous computing, everyday life, urban space, Situationism, communicative fields, critical design, relational art.

INTRODUCTION

When Mark Weiser coined the term ubiquitous computing at Xerox PARC in the late 1980s he spoke of a new computing era in more than one sense. On the technical level he predicted that computing power would break out of the grey boxes at our desks and proliferate into the physical environment. On a more theoretical level he tried to introduce a new way of thinking about computers. One that took into account the natural human environment [21]. In doing so Weiser initiated a process, which has had lasting effects in a variety of fields concerned with the implications of digital technology including art, design, cultural studies, sociology and philosophy.

Today we see a good part of Weisers predictions come true. Computers are increasingly becoming networked, mobile, embedded and context-dependent, while maintaining the interactivity we have come to expect. This creates a range of opportunities to provide new kinds of expressive tools to be used by people in the city. Both on the mass market but especially among experimental researchers and artists a number of projects relating to ubiquitous computing are carried out. In very different ways physical urban environments are enhanced with computational power in order to establish new ways of experiencing the city and new forms of social organisation.

Several projects utilize mobile phones and portable computers to create social networks based on digital annotation of physical space and sharing of everyday messages and information. This can be done as part of an effort to expose and build social knowledge [12] or to create a digital equivalent of graffiti, which offers a forum for controversial and

politically incorrect expressions [5]. Other projects are less focused on communication in the traditional sense and instead experiment with the creation of what could be called expressive environments. For instance by amplifying interference glitches from mobile phones within a certain area, thereby interrupting and maybe provoking people and calling attention to the multiple layers of electronic communication that pervades urban space [6].

In different ways these projects can be said to facilitate what in this paper is named social friction. Below we explore how thinking in terms of social friction can be one way to avoid pre-defined or exclusive ideas of what a certain technological system is supposed to do or how it should be used. We look into how social friction used as a strategy for design can pave the way for open-ended systems that leave much of the question of content and usage to the users or participants. In applying technological systems, that construct a digital space for the exercise of social friction, we are convinced that designers and artists can facilitate new ways for people to experience and participate in the construction of the urban environment. Elsewhere we have articulated a general theoretical platform from which to launch technological interventions that can contribute to a new kind of post-architectural urbanism – a *Digital Unitary Urbanism* [10].

SOCIAL FRICTION
Social friction is a fundamental aspect of everyday life. We use the term to denote the process, which separates different expressive behaviours and contexts from each other. Social friction is at play when people in the city act and express themselves in surprising and unconventional ways. When people challenge existing norms and leave marks and traces on their social and physical surroundings. But social friction is not necessarily something out of the ordinary.

Social friction can also be described as the 'rubbing of' of people on each other. It is the kind of friction that occurs when people, who hold different backgrounds, understandings and experiences, meet on the bus or in the street and exchange opinions, stories or maybe just gestures and glances. Social friction can arise from the occasional chat with a local shopkeeper and from silent interaction with the familiar strangers we meet every day [15]. One might say that social friction is the constant actualisation of difference, which produces a repository of energy that in turn will alter and drive social and cultural phenomena forward in often unpredictable ways.

Considered from a pragmatic viewpoint social friction can have both aggravating and enriching effects. It can result in both conflict and cooperation. But here we wish to go beyond or maybe below such a normative understanding of social friction. We wish to examine how social friction can be understood as an important part of the less clear cut and harder-to-grasp processes of *the everyday*. From this approach the concept of social friction should emerge as a way for artists and designers to think of and develop technology that incorporates itself into the socio-cultural fabric of the urban situation. Or into the natural human environment, to use Weisers term.

Social friction in everyday life
How can the relation between social friction and everyday life be further conceptualised? And in what way can the notion of social friction be used to establish a critical position, which creates an alternative to the functional discourses that has dominated ubiquitous computing so far?

Philosophical and sociological critiques of everyday life in an urban context have focused on the everyday as the setting for individual and collective appropriation of urban space. Our notion of social friction incorporates this idea of everyday urban life as the effort of people to inhabit and shape surrounding spaces and places.

French philosopher Henri Lefebvre argues that urban space is never stable or fixed. It is continuously produced by the way social actors and organisations relate to each other [14]. Building on Lefebvre we emphasize the continuous and participative character of both the everyday and social friction. Just as no one in the city can remove themselves from the production of space, no one can completely escape social friction. As people exercise different individual and collective ways of inhabiting space and create different forms of inhabitation, degrees of social friction will arise and this in turn drives the production of space forward.

Whereas Lefebvre made a thorough contemplation of the complex spatial processes through which ordinary people are dominated by the influences of political, economic and otherwise powerful institutions (mainly capitalism) in the production of social space, his fellow countryman, sociologist Michel de Certeau, focuses on the *practice of everyday life* [2]. De Certeau highlights the ways that

individuals by means of everyday tactics and 'silent procedures' escape the control of material and abstract institutions and create their own interpretations or writings of the city. Compared to Lefebvres focus on the need for collective resistance de Certeau is more concerned with the individual ability to create alternatives to centrally imposed structures.

As such de Certeau examines what could be called the anti-discipline of everyday life from a standpoint firmly rooted in a practice of the ordinary. This includes mundane activities such as talking, reading or simply moving around. Here the often unreflected actions we carry out when going about our daily lives seem to circumvent or even challenge institutionalized rules of conduct. Like when someone habitually walks across the lawn instead of following the designated walkway. As elements in de Certeau's way of conceptualizing the everyday these actions are highly interesting, but in terms of social friction some moderations must be made.

De Certeau argues that everyday life functions as a destabilizing factor upon institutional structures. But at the same time he tended to focus on individuals as *subjective* agents, whereas our interest in social friction requires an examination of people as *social* agents. This is a significant difference hence we must perform a shift of emphasis from individuality to collectivity as the key category of everyday life.

In a more directly artistic context the Situationist movement of the 1950s and 1960s, who for a period collaborated closely with Lefebvre, made an attempt to overcome what they considered to be capitalisms iron grip on everyday life in the city by developing new ways to experience urban environments such as *derivé*, *detournement* and *psychogeography* [13]. Both Lefebvre and the Situationists celebrated the city as the site of what they with inspiration from Bakhtin called *the festival*:

The city must be a place of waste. For one wastes space and time. Everything mustn't be foreseen and functional, for spending is a feast [9].

Both Lefebvre and the Situationists had a clear eye for the creative and un-functional aspects of everyday life. Not everything we do have a purpose and that goes for the actions and interactions that create social friction as well. But whereas the Situationists were clearly elitist in their approach, we are trying to come up with a strategy by which

artists and designers can allow people themselves to unleash this creative and un-functional potential.

So while all of the above mentioned criticisers of everyday life deliver valuable insights to our articulation of social friction as a critical position, at the same time it is necessary to clarify and briefly discuss the problematic aspects of their work and approaches.

The elitism of the Situationists manifested itself as a result of their artistic and political self-understanding. They were revolutionaries and for this reason most of the situationistic activities addressed ways in which to raise political awareness and kick-start the revolution. At the outset their strategies may seem rather similar to the idea of social friction, but the teleological aim of the Situationists was to create a sense of estrangement, even nihilism in the service of a utopian dream. This is strongly opposed to social friction as a notion firmly embedded in the pragmatism of the present.

Whereas the critique of everyday life found in the Situationist movement and to some extent in the writings of Henri Lefebvre share a strong ideological and political foundation, the criticism in this paper exists on a different level. The notion of social friction is mainly developed on the basis of an interest in how ubiquitous computing might create a space for new kinds of everyday social interactions and experiences. That is those subtle experiences, which cannot always be conceptualised in terms of functionality but still has valuable meaning in the everyday. For this reason de Certeau's focus on *practice* is very helpful. This also implies that though the notion of social friction defies any ideological superstructure, at the same time it is imposed by a certain degree of idealism towards inherent potentials of the mundane.

In terms of social friction the material, economic and political structures of everyday life, that pre-occupied both de Certeau, Lefebvre and the Situationists, mainly make up the backdrop that certain interpersonal expressivities may or may not relate to. This doesn't mean, though, that we are uninterested in the wider societal context within which social friction occurs. As a matter of fact relying completely on distinct critiques of everyday life might severely frustrate our attempt to construct the notion of social friction. Cases can certainly be made that

everyday life is not only the site of constant re-configuration and rebellion against institutions and structures as the works of Lefebvre, de Certeau and the Situationists might imply. Everyday life might first and foremost be constituted by the search for simplicity, comfort and order [16]. We will argue here, that there is no need to consider the two interpretations mutually exclusive. Actually the very articulation of social friction might prove a manoeuvre that can bind them together.

MEDIATIONS OF EVERYDAY LIFE
In many interpretations of contemporary society the very quality of everyday life is seen to be threatened by globalisation and the fragmentation of modern existence in general. This can be considered in terms of social friction. As the sense of cohesion and togetherness is weakened on family, community and national levels by the rise of individualism, transglobal information flows and multiple worldviews and realities, one might on the one hand think that social differences would be brought to the fore and the amount of social friction would increase. On the other hand these differences may be turned inward so to speak. They may increasingly be a matter of personal conviction, which is seldom challenged by or challenges the convictions of others, or only does so within certain closed, limited or temporary networks. Such an interpretation resonates with the widespread notion of the decline of the public sphere as such.

The dominant media and communications technologies of any era play a major role in this regard. Any kind of technological mediation of human relations can be said to either raise or lower social friction. This last decade much interest has been invested in the way the internet has affected social organisation. Today ubiquitous computing attracts increasing amounts of interest, and this move requires consideration of how ubiquitous computing might mediate everyday life differently than the internet does.

Social friction and the centrality of difference
Sociologist Roger Silverstone has argued that our present epoch has two fundamental tales to tell when it comes to mediations of everyday life as a social and moral space; one of a new kind of publicness and the other of individualism without commonness [17]. The first tale is exemplified by philosopher Hannah Arendt, who insists that public life can still exist and even flourish despite the fact that participants hold very different perspectives and positions. The centrality of difference is what matters. It is by seeing and being seen, by hearing and being heard from these different positions, and through various technological channels one might

add, that the opportunity for a new kind of publicness is created. But only if the differences actually meet and relate to each other for a period of time, one might furthermore add.

The second tale of individualism without commonness, which Silverstone himself seems to be leaning towards, is very much the consequence of technological advancements like the internet. Technologies, which connect people over wide distances, have created what Silverstone calls the illusion of connectedness. Even if people are directly connected, in say an internet chatroom, the 'me-centered' networks they form will break down under the slightest pressure. On the internet we are not forced to relate morally to each other for any longer, than we choose to. We can always just go somewhere else if things become unpleasant or if we encounter people or opinions, which we don't like. Following Silverstone one would therefore judge the level of social friction on the internet to be somewhat lower than that of the (physical) urban situation, which altogether has a greater ontological complexity.

Others interpret the sociality of the internet differently and liken it more to real life, but the important argument here is that ubiquitous computing has the capability to mediate everyday life in such a way that the danger of what Silverstone calls individualism without commonness is lessened. Urban space is by definition a space of heterogeneity and therefore potentially a space of high levels of social friction. By technologically facilitating displays of difference, one might hope to emphasise the shared and social quality of urban space.

Building on Arendt and Levinas-inspired sociologists and philosophers like Zygmunt Bauman the centrality of difference may be considered not only what generates public life, but also what enables the very morality or ethics of everyday life. It is in the face of the Other, that we meet our own morality. It is by our engagement with the Other, that we uphold the continuing debate on the question of right and wrong.

Social friction as a force of evolution
Now, such a stance may be considered overly idealistic or even naïve. But it does bring us towards an understanding of the mechanisms that form the patterns of public life and also how designers and artists can use technology to work with these patterns. Again these

mechanisms can be considered in terms of social friction. Design for social friction can be expressed as designing for the revelation of difference (the unveiling of the Other) that allows us to engage morally with each other. But it can also be expressed as designing for evolution. Social friction in our understanding is not only that which separates. It is also that which leads to change. It is through the total sum of multiple social frictions that the meanings and conventions of the city are put to the test and the urban situation evolves into something new altogether.

When a group of street artists decide to express themselves in urban space, they might at first be considered violators and prosecuted for breach of public law or disruption of private property. But gradually they might collect growing appreciation of their work in the general public. They might be invited to articulate themselves in certain urban spaces or in other forums, such as newspapers and magazines, and street art might even end up in art galleries. Street artists have then been recognized as producers of urban culture and the street art itself undergoes a transformation in terms of cultural significance.

Lots of people will continue to despise any kind of graffiti and street art, though, and shop owners and inhabitants seldom appreciate street art on their buildings and properties. So the personal and collective costs of social friction can be high at times. On the other hand street art may become an important part of the very meaning of the word *city*. For instance the existence of street art can contribute to an atmosphere of a certain kind of alternative or bohemian urban neighbourhood that some people identify themselves with and others just see as a natural supplement to high-rise city centres and suburban single-family housing. As a result of this not even shop owners and other 'victims' of street art might want to have *every* piece of it removed, since this in essence would include removing part of the city or the neighbourhood identity itself. Urban life is full of such processes of socio-cultural evolution.

As we shall discuss later, designers and artists can use ubiquitous computing and the notion of social friction to provide a broader group of people, that don't necessarily consider themselves (street) artists, with new means of participating in these processes. The important point here is that in the end it is by social friction that we establish the conditions of our shared life in the city.

And now we can see how social friction might combine the different interpretations of everyday life that were mentioned above. That is everyday life as either a space of expressive celebration and rebellion or as the search for simplicity and order. Social friction denotes both these processes. Social friction could be described as differences in action. As the process through which creative potentials are unleashed, contemplated and incorporated into the socio-cultural fabric of the city. Or to phrase it differently, social friction is the process through which people continuously re-work the relation between themselves and the city.

CITYNOVA
We will now begin to move from the articulation of social friction as a critical position into examining social friction as a strategy for design. Initially we do this by presenting and discussing CityNova as a conceptual vision. In this respect CityNova operates on several levels at the same time. At one level CityNova functions as an illustration of social friction. By describing the vision and two brief scenarios, we wish to illustrate how ubiquotous computing could be utilizied to facilitate the socio-cultural processes of social friction. At another level CityNova is a thinking tool, that is a mechanism through which to extend the conceptual understanding of social friction. This provides a better foundation for a further discussion of the differences between social friction as strategy and related artistic and design strategies. It is important to emphasize, that CityNova exists on a purely rhetorical level. The vision should accordingly not be understood as a design concept in its own right. Consequently the following description is more concerned with fictive scenarios that illustrate different situations of social friction than the actual depiction or description of possible interfaces and a coherent systems model.

CityNova is based on the idea of small, physical Nova-tags with resemblance to existing Radio Frequency Identification (RFID) tags. These small and inexpensive tags work like stickers due to an adhesive tape, which enables them to be attached to outdoor surfaces and moved from one surface to another. The Nova-tag can hold a certain amount of digital information in the form of text, pictures and sound that can be layered on and read from the tags via a personal digital device, such as a mobile phone or a PDA. As information is layered on the tags, time codes and position coordinates are generated by means of position-technologies like GPS. When people place the tags on objects like

buildings and lampposts in the urban environment or carry them around the city in unpredictable ways and leave them in unpredictable places, the codes provide later users with a sense of where the tags have been and maybe the context of the information that has been layered on them.

Nova-tags might be ignored, overlooked, searched or even hunted for. As such Nova-tags are meant to become a part of the urban topography. The tags will come to function as traces of human activity. Some of these traces will refer directly to activities or experiences that took place at the exact location, where they are left, thereby enforcing a sense of place. Others will refer to activities in other parts of the city, thereby enforcing a sense of space. In a general sense CityNova thus can be considered as a medium for individual expressivities, communication and interaction situated in concrete urban settings.
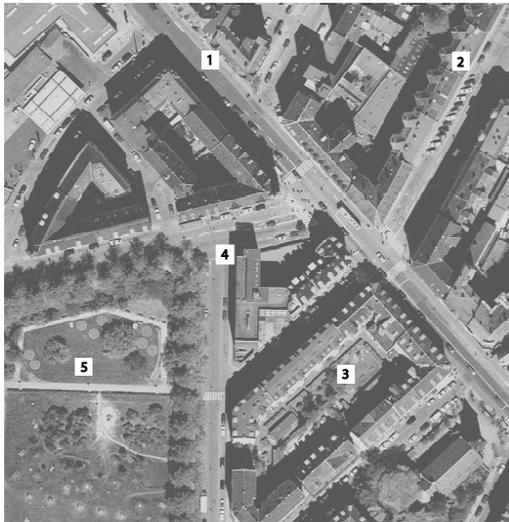

Figure 1: Five Nova-tags placed at different locations of a neighbourhood in scenario 1.

Scenario 1
A young woman has moved to a new neighbourhood and is trying to familiarize herself with the area. During a walk in the neighbourhood she stumbles upon a number of Nova-tags and gradually a feeling of belonging begins to emerge. **1.** Judging from the wear and tear of the first tag she reads from it has been sitting on the wall for ages. It contains a curious mix of information including an invitation to a long gone garage sale, a few notes on public parties in the area, a picture of kids playing on the sidewalk. **2.** In an adjacent street she finds a tag put up by a local historian. It holds information on the history of the area. Like people before her she adds a few comments on her own first impressions. **3.** In the backyard of her

building block she discovers a tag that holds sharply opposed comments on the current status of the neighbourhood as being either lively or rather dull. One note invites everyone to join an informal rally. **4.** When she arrives at the designated place of the rally she is met by a varied group of enthusiastic people with ideas on how to spice up the area. A number of other people have previously stopped by to place tags with suggestions and comments on what could be done. **5.** The following day she places several tags in the local park to promote a concert she is planning with people she met at the rally.
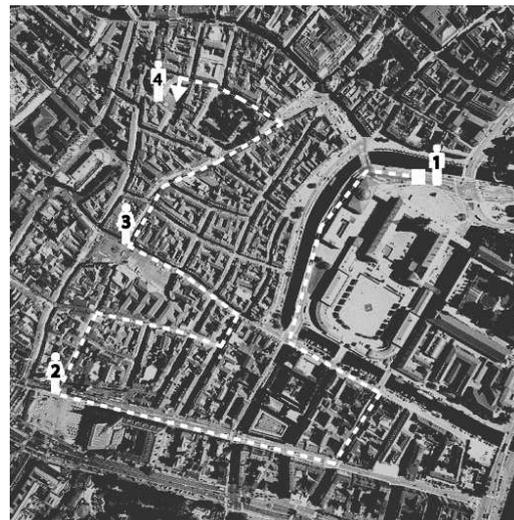
Figure 2: The route of a Nova-tag travelling from person to person through the city in scenario 2.

Scenario 2
As a Nova-tag is moved through the city and different people contribute information a chain of communication debating city transportation is created. With each communicative act the content of the tag is being transformed according to the social and physical situation of the participants.
1. Due to a citywide taxi strike a man is forced to take the city bus. As the overcrowded bus moves along with considerable delay his impatience and frustration grows. The man writes an unhappy exclamation to a tag and upon arrival he leaves the tag on the bus. **2.** The tag is picked up by a woman on her way home from work. Public transportation being an important part of her everyday commuting she feels provoked and thus compelled to express her disagreement. She writes a short text message on the necessity of public transportation to the tag, which she then leaves behind in the bus hoping to spark further debate. **3.** Later on the tag is picked up by a

passenger who habitually collects tags. As an act of diversion he places the tag on a passing bicycle as he leaves the bus. **4.** When the biker notices the tag he decides to take the debate in different direction by advocating for the supremacy of non-motorized vehicles in city transportation. He simply contributes a few pictures of his bike. After doing so he leaves the tag at the nearest bus stop.

Social friction in CityNova

CityNova is based on what could be called moveable annotations. Nova-tags, whether moved around or just left in one place, will annotate urban spaces and places with an extra layer of meaning or expression. In addition to reflecting the many facets of urban life and culture a technological system like CityNova is meant to create new kinds of connections between people across time and space. In effect previously unarticulated social frictions between people that leave and pick up information from the tags are facilitated. A digital space for social friction is created.

The scenarios are purposely narrated to illustrate the two central elements of social friction described above; the force of evolution (scenario 1) and the revelation of difference (scenario 2). The scenarios are obviously somewhat sketched, but what should be clear is that the content of CityNova is produced solely by the users. In this sense CityNova is the envisioning of an interactive many-way, de-centralised, bottom-up medium, which enable a new kind of urban communication. One might not know who receives a message, an opinion, a snapshot or something else that is put on a tag. One might not care. Maybe someone just wants to get something of his chest or express utter discontent, like the first man in scenario 2. Others might consider the tags some sort of personal diary or commentary for many to see (like a weblog). Nova-tags could also be used for more focused forms of communication. Like scenario 2 illustrates, user-driven system like CityNova could enable chains of communication that might not be politically potent in the classical sense but instead cause a clash or 'rubbing of' of opinions that could slowly alter the collective attitude towards elements of urban life like for instance public transportation. So in different ways the possibility of utilizing ubiquitous computing to affect – or more precisely give people of the city means of affecting - the urban situation begins to emerge.

In his analysis of the internet as a mediator of everyday life Roger Silverstone argues that human interaction and networking via the internet has created an illusion of connectedness. He also points to what he calls a privatisation of sociality. That is a sociality, which is at the beg-and-call of the individual, has little patience for the struggle with contradiction and make up 'a pale imitation of the face-to-faceness of everyday life, however romantic such a notion is seen to be' [18]. The kind of communication and interaction we have outlined in CityNova does not necessarily rely on the romanticism of 'face-to-faceness'. Most interactions in CityNova are asynchronous as individuals pick up information left behind by others. Still, with CityNova we have presented the argument, that ubiquitous computing offers ways to de-privatise sociality and contribute to a new kind of friction and connectedness in the city.

SOCIAL FRICTION AS STRATEGY

Now, the kind of thinking we have articulated here has been around within art at least since the 1960s. During that period a number of avant-garde artists and artistic movements worked to move the artwork away from being just a 'work' to be watched to become something that required and encouraged active participation and since then artists have been concerned with social processes as artistic material. Within the realm of design there are more recent traditions with similarities to the strategy we suggest here. Maybe most notably Anthony Dunne and Fiona Raby's notion of *critical design* [3]. The question we will be pondering in this last part of the paper will be how to relate the notion of social friction as strategy to similar discourses within art and design.

Intervention as strategy

The Situationist movement acted as one of the major influences in the 1960s and 1970s artistic wave of happenings, performances and interventions. The Danish situationist Jens Jørgen Thorsen developed the idea of *communicative fields* as a way to describe the new artistic situation:

The communicative phase of art presupposes the disappearance of the spectator (which isn't the same as the disappearance of the audience). Communicative art thrives in-between, in the space between people. Considered this way art is no longer a form of the aesthetic, the philosophical, experience, time or mind. Art becomes a function in social space [19].

As a result of this line of thinking Thorsen pointed out that any form of social organisation or situation becomes included in

the notion of art. This may be a somewhat distorting move, which makes it hard to speak of or distinguish art at all. What is worth noting here is that everyday life at that point becomes the scene of artistic interventions. Art is no longer confined to museums, biennales, galleries or other pre-defined artistic spaces nor to be understood as the mere production of material objects. The notion of art can then be said to incorporate all the actions, conflicts and frictions of the everyday. But this doesn't mean that art necessarily arises *out of* the practice of the everyday like social friction does. Artistic processes might very well still be subject to the convictions or goals of the artist or others guiding the process of art-making.

When Thorsen and other members of the 2. Situationist International in 1962 opened an exhibition in Copenhagen, they invited the audience to help them launch 'an artistic conquering' of the neighbourhood around the exhibition hall. The collective painting of a fence around a near-by publishing company was halted by the police [20].

In this case, like in many other interventions of that time, Thorsen and his colleagues had a clear (political) agenda. They wanted people to take action and break down defining structures and conventions of public space. Thinking of social friction as a strategy for design could be described as way to de-centralise the definition of the artistic agenda. Designing for social friction could perhaps be described as a way to turn the notion of the intervention upside down or inside out. As a way of providing digital tools for people to intervene in the lives of each other. And to do so in a way in which the form and outcome of those interventions are collaboratively defined.

In later years the Situationists have become an often cited source of inspiration among both artists and designers interested in the relation between ubiquitous computing, sociality and urban space. The legacy from the Situationists is often used to create systems that facilitate and encourage the creativity and expressivities of the audience or participants. Whereas the Situationists fought against capitalism itself, the struggle today instead seems to be to supply people in the city with ways of working around institutional shaping of urban space. To create communicative fields which may not be commercially or functionally feasible but has social and cultural value in everyday life. A good example is the FIASCO-project, in which participants are encouraged to take part in a game played in urban space [8]. By performing acts of 'utter stupidity' in the streets teams of participants can gain city ground and eventually defeat their opponents.

FIASCO, Glitch [7] and other projects working with the legacy from the Situationists can easily be thought of in terms of designing for social friction. Actually it would be credible to think of social friction as a form of theoretical foundation for or interpretation of these practical works of art and design. In many cases this kind of projects seem to linger in between the domains of art and (interaction) design, an important objective being to challenge existing conceptions of urban space and the role of technology herein.

In this sense such projects and the notion of social friction as both critical position and as a strategy for design has parallels to critical design understood as a way of 'asking carefully crafted questions and making us think' [4].

Relation as strategy
Approached from a slightly different angle designing for social friction might be considered working with that which since the 1990s, with inspiration from French writer and art critic Nicolas Bourriaud, has been termed relational art, relational aesthetics or socializing art. Bourriaud, along the lines of Thorsens communicative fields, talks of art as a *social interstice* [1].

An example of such a relational art group is Danish Superflex, which utilizes digital technologies, mainly the internet, to connect people in new ways. That is the group provides mechanisms by which people can interact, tell their stories, build communities or in other ways create local or global communicative processes. In this regard the work of Superflex is a distinct critique of traditional broadcast media, which position people as passive receivers with no or only limited means of participation and influence. In an approach very similar to what is articulated in this paper, Superflex seems to explore ways of thinking about digital media 'from below'.

Superchannel and Karslkrona2 are two examples of projects carried out by Superflex. Superchannel is a set of technological tools, which individuals or groups of people can use to create their own internet based tv-station. The idea is to activate a variety of actors, which jointly and through ongoing debate and commentary create a media product with root in their everyday concerns and experiences as opposed to being directed by a pre-defined editorial standard or emphasis.

Karlskrona2 was developed in collaboration with the city of Karlskrona, Sweden. The project consisted of a 3-D virtual model of the city centre, which citizens could enter via the internet. Once inside they could move avatars around to encounter other participants and build simple, virtual buildings. The purpose of the project was to create a forum in which citizens could discuss the future of their city.

Whereas some relational artists directly state democracy and equality as their goal, maybe empowerment is a better common denominator for the kind of projects Superflex carries out. To Superflex technology seem to represent an opportunity to strengthen social ties and build communities by providing new social tools and new channels of communication. Both Superchannel and Karlskrona2 provide ways that people who share a physical space like a residential area or a city with a technologically mediated environment to meet and re-enforce the sense of commonness and togetherness. As such Superflex work with the sort of relational art that 'wants to bring people together and increase understanding for each other and for our own situation' [11].

Some contemporary versions of Situationistic interventions in public space tend to focus on the experiences of the individual and the facilitation of individual forms of expression. They mainly operate in the realm of the aesthetic. Such an approach stops short of thinking about how these individual actions and experiences might shape collective life in the city. In terms of social friction they can be said to work with the revelation of difference, but not so much with how these differences will lead to evolution. In this regard Superflex and likeminded artists operate in the realm of the political. Even though aesthetics obviously play a part, Superflex is more concerned with the social result. The parallel to the evolutionary power of social friction then automatically comes to mind. But it is a certain kind of evolution Superflex tries to facilitate. An evolution based on cooperation, (democratic) negotiation and solution.

With the development and discussion of CityNova we have tried to illustrate that the notion of social friction as strategy can also be used to facilitate a different kind of evolution, the kind we previously called socio-cultural evolution. That is an evolutionary process, which incorporates the rational, well-thought-out and considerate actions and expressions of people in the city, but also, and maybe especially, the spontaneous, creative, playful and even meaningless actions and expressions that also have a major role in everyday life.

What we have done here is to try to re-articulate the kind of interventionist or relational strategy most often found within art and apply it in a broader socio-cultural setting. It is our conviction that by insisting on and trying to work with all the facets and aspects of the everyday and everyday relations one might find a way to utilize ubiquitous computing to stimulate social and cultural activity. Or to phrase it differently, one might find new ways to release the energies and frictions that continuously transform and enrich the urban situation.

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