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Springer

2021-01

Lehtinen , S T & Vihanninjoki , V J 2021 , Aesthetic Perspectives on Urban Technologies :
Conceptualizing and Evaluating the Technology-Driven Changes in the Urban Everyday
Experience . in M Nagenborg , M González Woge , T Stone & P Vermaas (eds) ,
Technology and the City: Towards a Philosophy of Urban Technologies . Philosophy of
Engineering and Technology , Springer , Dordrecht , pp. 13-25 , Philosophy of the City
Summer Colloquium 2018: Technology and the City , Enschede , Netherlands , 11/06/2018 . <https://doi.org/10.1007/>

<http://hdl.handle.net/10138/342831>

https://doi.org/10.1007/978-3-030-52313-8_2

acceptedVersion

Downloaded from Helda, University of Helsinki institutional repository.

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Please cite the original version.

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Aesthetic Perspectives on Urban Technologies – Conceptualizing and Evaluating the Technology-Driven Changes in the Urban Everyday Experience

Forthcoming in Nagenborg, M., González Woge, M., Stone, T. & Vermaas, P. (eds.). 2020. *Technology and the City: Towards a Philosophy of Urban Technologies*. Dordrecht: Springer (Philosophy of Engineering and Technology Series).

Abstract

The pervasiveness of technology has changed the way urban everyday is structured and experienced. An understanding of the deep impact of this development on everyday experience and its foundational aesthetic components is necessary in order to determine how skills and capacities can be improved in coping with such change, as well as managing it. Urban technology solutions – how they are defined, applied and used – are changing the sphere of everyday experience for urban dwellers. Philosophical and applied approaches to urban aesthetics offer perspectives on understanding technologically mediated sensory experiences within the urban realm. This chapter shows how new urban technologies act as *an agent of change* within the familiar urban environment. We outline how the perspective of philosophical aesthetics can be used to understand urban technologies and their role in the constitution of everyday urban lifeworlds.

Keywords

Urban technologies – Urban aesthetics – Everyday experience – Urban lifeworld – Wayfinding – Affordances

0. Introduction

In order to understand life in contemporary cities, one must develop a refined understanding of how technology contributes to it. The urban everyday lifeworld consists increasingly of objects, activities and relations that combine advances in technology and design in complex ways. Technology has already profoundly changed the way urban environments are perceived and experienced. Our aim in this chapter is to describe how this development and process of

change within the experiential sphere is affecting urban dwellers and their relationship with the urban environment in which they live their everyday lives.

One of the aims is to introduce *urban aesthetics*, a relatively new strand of philosophical aesthetics, into the philosophical discussion about urban technology, and the various ways it affects the experience and use of contemporary cities. Even though aesthetics is still most commonly considered to concern only the form, appearance or even just the visual look within the extraordinary sphere of art or other creative human pursuits, we emphasize that it is also useful in understanding multi-sensory, embodied and much more basal levels of everyday experience. This comprehensive understanding of aesthetics offers valuable insight into the experiential repercussions that incremental change through adaptation of technologies has caused, and will continue to cause, as cities change in the future. Urban aesthetics is thus used as a framework for discerning and assessing not only the qualitative changes that urban technologies set in motion but also beyond their most immediate implications for the formation of the experience. This is done more specifically through selected approaches from urban and everyday aesthetics and reflecting them through current theories about affordances of urban technologies.

An aesthetic perspective on technologies emphasizes the view that everyday experiences are to a great extent grounded in the materiality and sensory formation of the surrounding conditions, even though these become altered by imaginary and interpretative extensions that point beyond the most immediate experiential qualities. A central question is, how does each new urban technology affect this sensory basis and the socio-cultural interpretations of it? The intention on a larger scale is to reveal the complex interdependencies between applications of new urban technologies and the human agents within the urban sphere.

Our hypothesis is that technology often acts as *an agent of change* in urban environments. Since many elements in urban environments are relatively long-lasting, new technologies are added to an already existing framework of meanings and functionalities. Technological solutions can thus be experienced as a mere addition to previously existing conditions, even though their effect would actually be more fundamental. However, in most cases, we argue, they initiate a process of deeper adaptation which transforms the everyday experience of urban dwellers by changing their behavior, habits, expectations, and preferences. What this actually entails is beyond the scope of this article, but we are raising some relevant points for future debate. We see clear value, for example, for planning and design processes in discussing urban experience as technologically mediated, and in doing this more specifically through the lens of philosophical aesthetics. So far this has been done fairly little and even then, the notion of aesthetics is often reduced to refer only to artistic or other kinds of creative practices.

Our interest in this topic stems from the realization that technology significantly alters not only how the city is experienced directly but also regarding the everyday habits and activities beyond the most immediate effects of how a city is perceived. In this chapter, first, we take a look at urban aesthetics in general. This is important since it is still a fairly unrecognized area of study, yet its attention to the experiential quality of everyday life is particularly apt for discussing the effects of contemporary uses of technologies. These effects are analyzed in more depth in the third part which focuses on technologization of the urban everyday. Throughout the chapter, GPS-based navigation technologies are used as an example of new urban technologies in everyday use: the focus is on how their use via mobile phones in, for example, bicycle and pedestrian wayfinding (map apps, route planners) is affecting how even the familiar and otherwise unaltered urban environment is perceived and experienced.

This is studied more precisely through the notion of affordance, which is central to understanding how advanced technologies have acquired a fundamental and formative role in the contemporary urban lifeworld.

1. Urban Aesthetics

Since the look and feel of urban environments affect their inhabitants in both explicit and implicit ways, aesthetic factors play a central role in urban lifeworld and its constitution (cf. Madsen 2002). It is thus reasonable to assume that philosophical aesthetics offers a relevant framework for assessing both *what* the urban context is and *how* it becomes processed in human experience and the sphere of human action. One has different types of relationships with many different cities, especially in the contemporary globalised world, but it is also fair to state that urban life is about experiencing urban environments – their material, social and symbolic dimensions – mostly in the context of the *everyday*.

Even though the everyday is “an essentially contested concept” (Saito 2017), it does provide an obvious framework for looking at how different functions of cities have been traditionally planned. It thus makes sense to focus on the concept of the everyday in order to discuss how cities are used and experienced as well. The everyday attitude of an urban dweller is pronouncedly “colored with routines, familiarity, continuity, normalcy, habits, the slow process of acclimatization, even superficiality and a sort of half-consciousness” (Naukkarinen 2013). Through everyday actions many elements of the urban environment ‘make sense’ that might not even exist otherwise. These elements include everything from the systematically planned temporal rhythms of urban transportation to how different functions and services are located geographically, for example.

What, then, is specifically *aesthetic* about the everyday urban experience and what makes aesthetics in general a relevant approach in studying the relationship we necessarily have with the urban surroundings? According to some views in the field of everyday and urban aesthetics, there are two ways of relating aesthetically to one's environment. The first is what is most often understood by aesthetic experiences: the extraordinary experiences of beauty or otherwise exquisite and outstanding experiential qualities of the environment. This view emphasises the highlights, those moments that truly make one pay attention to the perceivable features of the city. The "intentional attention to aesthetics" (Saito 2017, p. 9) marks a break in one's everyday life. It speaks of peak moments that make one admire or detest something for the sake of its appearance (for the role of "negative aesthetics", see e.g. Berleant 2010). This idea is linked to the traditional view in the philosophy of art which regards *disinterestedness* as a core feature of aesthetic judgment. In the context of the built environment, this is also the traditional perspective on architectural aesthetics, conceiving buildings and other structures as something to be evaluated primarily through their visual and spatial appearance. Even though the multisensory aspects of experience are acknowledged, the emphasis tends to be on visual qualities, experienced even statically and as detached from the actual use of these spaces.

The concept of the "tourist gaze" (Urry & Larsen 2011) offers one way of characterising the aesthetic relationship to a city that one is only visiting or assessing from an otherwise distanced position. In this case the experience is defined by the very lack of most everyday associations with places. The place is not "our place", and we are able to examine it in a way that is detached from how it is used on a daily basis. One of the main motivations for observing the features of a city as a tourist is to satisfy our interest in things that are new to us. The camera is the emblematic technology of the tourist, and is used in an attempt to

record the experience of our visit. This kind of relationship risks reducing urban environments to aloofly observed landscapes and fixed backdrops for taking selfies. When interested in the appearance of the city in this way, one does not need knowledge about the more or less hidden structures that make everyday life possible within it (Latour & Hermant 1998). Neither does one have access to how familiarity with a certain place will emphasise some aesthetic features and suppress others. The tourist gaze is thus emblematic of one end of the scale of aesthetic interest in urban environments.

The other end of the scale of aesthetic interest points towards understanding the aesthetics of the urban environment as it emerges from one's everyday experience. This kind of experience is defined by *familiarity* and takes place in the everyday engagement with the city (Haapala 1998, 2005, 2017). Routine, repetition and temporally-based habits characterise everyday life in the urban environment. Aesthetic value is traditionally ascribed to the new (Saito 2007) or the extraordinary (Leddy 2012) as something that piques interest, but recent views in the philosophical study of everyday aesthetics also find fundamental aesthetic value in that which is most familiar to us (e.g. Saito 2007, Haapala 2005). Aesthetic pleasure (or displeasure) thus forms one significant or even fundamental part of this basal level of experience that defines our relationship to our particular everyday environment. This relationship is further defined by individual variations in using and interpreting the particular environment in question.

Making this distinction between two modes of aesthetic attitude towards urban environments is based on the experience of *strangeness* and *familiarity* (Haapala 1998; see also Tuan 1974). It also emphasises that either the environment and its physical features are in one's direct focus of attention – and subjected as such to aesthetic judgment – or they are understood to be experienced through their functioning as the wider, experiential and

enabling context of everyday life. Implementing new urban technologies also adds elements of strangeness to the familiar urban lifeworld. The manifold and even contested effects of such implementation are the focus here. It is important to bear in mind, though, that any actual separation of technology from its field of operation would be illusory. Neither is it possible to separate technology from the urban lifeform, however the co-evolution of urban experience and technology can be studied through the themes of the everyday, familiarity, and strangeness.

The two aforementioned ways of relating to one's environment aesthetically are not contradictory or mutually exclusive, even if they become easily presented in a way that emphasizes the difference in experience. On the contrary, both elements co-exist in the urban experience, and they support each other to a considerable degree (Lehtinen 2015). In this chapter, however, we are more interested in the latter perspective – how the everyday as such constitutes the urban lifeworld as aesthetic. The everyday as characterised by repetition, routines and familiarity emphasizes that one reacts to and thus also experiences in a different way that which has with time become most familiar and mundane to oneself (Saito 2017). Unintuitive, new, or otherwise abrupt phenomena in the urban sphere might result in rupture or even collapse of experiential familiarity, which together with a smooth seamlessness created by a certain continuity in experience is characteristic of our individual set of quotidian activities (Haapala 2005). In abrupt situations, the relationship with the familiar environment becomes cracked, unbalanced and even unsatisfactory, and the normalised reliance on the presence of technology may become problematic as a consequence.

The role of technology within the framework of familiarity in the urban environment is indiscernible from the very goals that one has within one's everyday life. New technologies, when successfully adopted, merge with other ways of doing and thinking in

inseparable ways. Different types of user interface are generally designed with intuitiveness and ease of use in mind, even though it is a difficult and highly case-specific goal to reach. Home automation, for example, aims at facilitating the use of the most immediately experienced and familiar surroundings, therefore interfering with a very intimate sphere of personal life. Achieving the desired level of intuitiveness through the design process is a complex task, and failing to do so will risk leaving the end-user discontented with and estranged from the new technological component.

New technologies that are implemented into existing structures and uses of the urban environment build new experiential layers that are more or less based on already existing networks of affordances. These layers refer directly to how affordances build up and become experienced and interpreted. The intertwining of experiential layers affects and constitutes the current conditions of the urban lifeworld as it is. These layers are essentially related to the physical features of objects in the environment, but they are also more or less mediated by the technologies used. GPS and location-based or -aware mobile applications are a good example of this: besides the universally valid spatial co-ordinates, many uses of these technologies are firmly based on the material features of the environment, such as buildings, conventional route patterns and different types of natural and man-made objects that create the detailed urban landscape. But these technologies also add a significantly different layer to the perceived elements: by making relations visible and by giving new, advanced form to previously intuitive modes of wayfinding, they contribute to the experiential fabric of the urban sphere even more than might have been thought. Besides this actionable layer, the skilled use of mobile applications gives them other dimensions too: for example, by stimulating memories and imagination tied to the familiarity of places, or to the technologies

themselves, as well as a possibility of creative and strategic variations in the use of urban space.

The description of experiential layers is not used in this context to prove the existence of some type of original, basal level of experience beneath the socially conditioned skills. On the contrary, this points towards understanding how human behaviour, the ensuing actions and especially the prevailing preferences, are the product of a deep and multi-level experiential engagement with the environment. This perspective also emphasises that, in fact, most technologies are based on older technologies and that their overlap is also reflected in the process of learning, un-learning and re-learning the skills and habits required to use them. New technologies emerge at a fast pace and these changes affect the human experiential sphere. Change as such, however, is difficult to grasp conceptually, even though it is a central part of the urban everyday experience. Technology-induced change – whether incremental, disruptive or transformative – is a key factor in understanding how the urban everyday is experienced, and how the urban environment is perceived and evaluated as a part of this experience.

2. Technologisation of the Urban Everyday

As a starting point for our experiential analysis of urban technologies, we acknowledge the fundamental role of practices and routines in the constitution of the urban experience. We thus rely on the Heideggerian (1978) approach to the human condition as the “focal point” of various and practically innumerable functional relationships between human beings and their surroundings. What is important here is that the essence of technological things – their functionality or “toolness” – can never be completely understood via a traditional,

instrumental view of technology. According to this instrumentalism, technologies are basically neutral connectors between intentions and effects; that is, they are mere means-to-an-end. On the contrary, as postphenomenological philosophy of technology acknowledges (see, e.g. Ihde 1990, 1993, 2010, Verbeek 2005), tools and technologies open up and make comprehensible new possibilities of use and action: they mediate our experience of reality, and it is often the various tools and technologies we make use of in our everyday lives that eventually allow us to conceive our pursued ends as ends in the first place.

As Ingold (2000) has convincingly pointed out, technologies are always embedded at various levels in the structures of society, and thus the effects that the changes in technological realities have on society turn out to be pervasive and widespread. For example, thinking of the technologically induced changes in the forms and structures of production in Western societies, “the development of [production] forces has transformed the entire system of relations between worker, tool and raw material, replacing subject-centred knowledge and skills with objective principles of mechanical functioning” (p. 319).

What is more, this embeddedness of technologies in the structural foundations of any society is opaque by nature: the technology-laden societal structures and mechanisms do not reveal themselves, but they remain implicit in the practices and conventions that constitute the socio-material realities of a culture. The exact role that various technologies have in a society is seldom (if ever) observable as such, but may be addressed through anthropological study: only by examining in more detail the concrete practices and the related socio-cultural ways of experiencing reality, can we access the role in the mediation process that commonly used technologies have.

In order to understand more thoroughly the experiential implications that present-day urban technologies might have, certain conceptual clarifications are required and, above

all, the relationship between mere tools and “full-blown” technologies has to be elaborated. The central point seems to be that tools compose a very general and open-ended category of practical items (the usage of tools is most likely not even restricted to mankind), whereas technologies pertain to particular types of socio-material forms of life – that is, to the so-called modernised societies. In other words, “tool” is a more general category, and “technology” is a sub-category of tools, presumably characteristic of modernity. Hence the question concerning the essence of technology turns out to be a question concerning the essence of modernity.

However, as Verbeek (2005) has argued, such approaches to the essence of technology tend to be overly abstract and monolithic, thus losing sight of the significance that particular, concrete technologies have. According to Verbeek’s view, the fundamental problem in such a line of thought lies in focusing on Technology as the determining condition of modernity, instead of examining various technologies as practical and useful entities that open up new possibilities for acting in the world – as well as experiencing it through a course of action. Moreover, the coupling of modernity and the technological seems to rely on a circular mode of argumentation, for the technological mode of thinking is already assumed as a necessary precondition for the occurrence of concrete modern technological practices. The question of where, exactly, the technological thinking itself originates remains unanswered.

Contrary to the traditional approaches, the supposed “technologization” of our worldly relations – that is, how modern technologies substitute for more traditional tools – ought to be seen as an essentially socio-material process. Such a process, in turn, consists of the lengthy and laborious development of concrete engineering and design practices, taking place in certain particular societal contexts, thus exemplifying the prevailing ideologies and values of the time. Indeed, it is the gradual emergence of an established engineering industry

that is of central importance here, for such a development enables – and perhaps even forces – viewing the everyday and its contents externally, from an external point of view. This, in turn, has far-reaching implications regarding our relationship to the various devices we encounter in our everyday life.

For example, Ingold has analyzed the emergence of proper technologies as a process of externalisation, of “a progressive cutting out of technical from social relations” (2000, p. 314), which removes the productive force of tools and devices from the user’s everyday experience of them. In short, the subject-based skills and techniques that the adequate use of tools requires are thus replaced by objective technological knowledge that lies “elsewhere” – outside the context of application – altering and potentially impoverishing the relationship between user and device. Though such an externalisation may be a phenomenon that primarily affects society on the “objective”, structural level, it also has profound consequences for the “subjective”, experiential level. The experiential implications, which are the proper scope of this chapter, can in turn be approached through an analysis of particular devices and their materiality that shape people’s everyday lives and experience.

The Ingoldian (2000, p. 316) concept of “machine” is helpful in understanding the essence of a technological device, since at the level of material instruments, it is precisely “the machine [that] has come to signify the independence of technical operations from human sensibility”. The difference between a tool and a machine has to be viewed from the perspective of goal-oriented everyday practices: a tool is essentially an integral part of a user’s day-to-day activities, withdrawing from attention in order to enable its user more means of worldly actions for achieving various objectives; a machine, in turn, has an objective logic of its own, demanding a user’s attention and forcing them to concentrate on the operation of the machine itself, thus leaving other daily tasks aside (Raudaskoski 2009).

It has to be emphasised that the distinction between tools and machines refers to the two modes of user experience that often overlap, and in any case do not exclude each other; the distinction merely points out the two different dimensions of a user's relation to a single material device. Considering, for instance, mobile phones, it is clear that "on the one hand [a mobile phone] is a tool that extends our 'bodies' by giving us more means for mutual communication, on the other hand it is a machine, a technological device that operates under technical rules and processes of its own" (Raudaskoski 2009, p. 44). A mobile phone – as well as any other technological device – thus has a kind of "dual identity" as part tool and part machine, and the development of a device's identity is, in principle, a matter of contingency: a technological device might either become a handy tool, or it might remain as a mere disruptive machine.

Now the interesting question is how, and under what circumstances, do complex machines actually become tools, as they seem to do: how, exactly, does a machine become involved in practical activities in such a manner that the machine-side of a device eventually yields to the tool-side? As applied and underlying technologies are becoming more and more fine-tuned and complex, and thus more distant from the user's everyday experience, this is a topical and urgent question. In any case, technologies simply have to gain a "tool-identity" by various means of familiarisation in order to enter the sphere of the everyday – and to have practical value within it.

Despite the fact that complex technological devices become integral parts of our everyday life, this is merely a partial truth. It is due to their dynamic dual identity as part tool and part machine that technological devices tend to inject a certain instability or even vulnerability into the everyday sphere of uses and actions. This means that even though various devices have become ordinary parts of our activity systems, and thus experientially

familiar, the machine-side of their identity and the related experiential strangeness has not completely disappeared.

A comparison of a more “traditional” tool with a technological device illustrates the idea of vulnerability, and helps to understand the existential condition of the far-reaching technologisation of our everyday lives. Here we may, in part, rely on Heidegger’s (1978) classic analysis of the broken tool: the breakdown of the hammer halts the everyday procedures of the workshop and thus reveals the normally hidden functional connections (the referential in-order-to structures) that are based on the handiness of the various interrelated tools and utensils. In short, when the hammer does not fulfil its task, it no longer exists as a genuine tool but as a mere object that is present to us, demanding our attention.

Such a “standard interpretation” of a broken tool also applies to technological devices: just as the breakdown of the hammer paralyses the operations of the workshop, the breakdown of a smartphone prevents us from doing what we normally do with it – whether that “normality” consists of being in touch with our friends, answering work-related e-mails on the go, or getting to places with the aid of a navigation application. However, despite these similarities, there are still notable differences between the “toolness” of a hammer and that of a smartphone; this becomes apparent when one asks what, exactly, will happen next, if (and when) the tool *de facto* breaks down? To be more precise: what will the user do in order to restore and maintain the normal functions that the tool affords?

It is likely that the blacksmith – who in Heidegger’s original example runs the workshop – is capable of either fixing the hammer on their own, or at least replacing it with an alternative tool from the workshop. The smartphone user, on the contrary, is helpless: they may try to switch the device on and off, or remove the battery for a while and hope for the

best. Probably they will have to rely on the expertise of a repair service or replace the device altogether by purchasing a new one.

Here the machine-side of the smartphone is apparent: despite the seeming familiarity of a technological device, even a relatively minor event of hardship allows the fundamental strangeness of the machine reappear. Indeed, even if we learn to use technologies as tools – that is, if we manage to integrate various technologies into our daily lives quite seamlessly – we do not necessarily familiarise ourselves “with the functioning of the technology as a machine”, as Raudaskoski (2009, p. 45) has suggested. For example, not many smartphone users actually learn to use the device as a tool by getting acquainted with the internal logic of the software or the details of the hardware, though it is precisely these dimensions that eventually constitute the functioning of the technology as a machine.

Indeed, while integrating various devices into our everyday, we remain on the superficial level of *interface*, and it is these different interfaces that practically constitute our relation to technology in general (see Hookway 2014, especially pp. 44–46). Thus one can argue that the “tool-interpretation” of a machine or a technological device in itself remains necessarily at the level of interface: “the machine as a tool” then means technology as conditioned by the human perspective of various intentional uses and actions. Even further, technological devices may present themselves as mere tools, though there is always more to them, for the “objective logic of the machine” is typically inaccessible through the ordinary user interface.

Design also typically operates at the level of interface, rather than the level of the machine that lies “behind” the interface, potentially blurring our understanding of the complexity of various technologies. This is why the excessive refining of design processes – the pursuit of ever “easier” and “more intuitive” user experience – might even foster the

above-mentioned vulnerability inherent in the technological dimension of various devices. As the everyday use of a technological device does not call for any kind of understanding of the machine-side of it, we are rather defenseless against its inevitable malfunctions. Indeed, it is not too exceptional that every now and then our “smart” devices can leave us quite helpless in an everyday situation – whether due to a run-down battery, an unnoticeably outdated application, or some other kind of temporary jam.

The ever-increasing amount of “superficial” interfaces in our everyday life has, along with the apparent political and power-related implications (see e.g. Galloway 2012), certain experiential consequences that have so far been barely addressed, if at all. If the penetrating technologisation of our everyday truly gives rise to an emerging vulnerability, this may eventually pose a threat to the experiential quality of the everyday, and even to its *everydayness* itself. This has to do with the fundamental relationship between tools and the everyday or, to be more exact, the role that tools have in the constitution of everydayness as a specific mode of experience. According to the Heideggerian argument, it is precisely the unobtrusiveness of tools (their ability to withdraw from experience) that enables the peculiar smoothness characteristic of an (valuable) everyday experience. The unobtrusiveness of tools is ultimately based on their essence as being something *reliable* – i.e., *not* vulnerable (Heidegger 2002). The overall reliability of tools (that is apparently at stake here) can thus be seen as a ground or essential prerequisite for the everyday experience of smoothness, and the related aesthetics of familiarity.

When discussing in general the reliability of the tools that afford our everyday uses and actions, we are dealing with the normally tacit meaning-structures that eventually make our everyday sensible to us, and thus comprise the substantive basis of everyday aesthetics as a whole. In addition, the smoothness of the everyday can be seen as a necessary prerequisite

for experiencing other, perhaps more traditional types of aesthetic values that stand out and pique our conscious interest. Hence a reliability-based experiential smoothness has aesthetic relevance in two different senses: as an aesthetically valuable phenomenon in itself, and as a “preaesthetic” condition for further-refined and conceptually analysable aesthetic experiences (Lehtinen 2005). These fundamental-level remarks have to be taken into consideration when evaluating the various aesthetic potentialities – both towards positive or negative outcomes – that are necessarily involved in introducing new technologies to our urban everyday.

3. New and Emerging Technologies as Agents of Change

Urban environments are by no means homogenous or stable, and the particular aesthetic fascination of cities can be linked to their diversity (Bonsdorff 2007) and even to some extent to their fast pace of change. With a focus on urban technologies, futurity and change in general are central themes to be addressed. The aesthetic dimension of experience related to urban technologies necessarily affects and is affected by the responsibilities and prospects of urban planning and understanding the experiential impact of particular technologies would help in determining what exactly is changing and in what type of time frame.

Implementing new urban technologies realigns various functions in urban environments according to their current norms and projected technological level of the city in question. How new technologies are brought into use also raises questions regarding the status of the elements that are most affected by the implementation and adoption of these technologies. “Conservatism” versus “futurism” are two approaches regarding whether and to what extent the existing features of the urban environment should, or could, be changed.

Traditionalist perspectives emphasise the “precious quality of human continuity” (Berleant 2007, p. 81) even going as far as preserving urban environments for the sake of their “museum value”. Innovation-oriented paradigms such as the smart city ideology lean towards fascination for change for its own sake and emphasise assessing the old through its relationship to that which is new or emerging. Interestingly, both of these value discourses tend to be rather limited in the way they focus on the given conditions or some strong interpretation of the current situation and thus neglect the inherent potentiality of the environment. In other words, a conservation perspective is overly suspicious of change, whereas a futurist perspective idealises change led by new and emerging technologies.

When adopting new technologies, small features can have relatively large experiential consequences. The “clumsiness” resulting from early steps in learning new technology-mediated habits is a reminder of this. These inescapable side-effects of change have fuelled suspicions towards new technologies. Change can be feared as generating more change that would affect everyday routines and habit patterns in negative ways. If technologically-induced change becomes naturalised, it might also be easy to lose track of the actual drivers directing the development. Some of these change-related blind spots of implementing new technologies might thus be avoided by focusing more systematically on the *quality* of experiences (Sanakulov & Karjaluoto 2015).

The aesthetics of the city is also of concern in the process of making as accurate as possible different technological representations of an urban environment. It is possible to generate digital representations of urban environments, for example, through building or city information modelling (BIM & CIM). The focus of these techniques is often on making the functional features of a city visible, but the aim is to make the representation as realistic as possible. Existing and chosen technologies dictate many of the parameters, but choices are

also made as to which perceptual features are interpreted as being close to the average everyday experience of the actual conditions. The fascination of these virtual representations is that they can be used to replace the real city: for example, making it possible to perceive the city at one glance, something that is not physically possible for an individual without some kind of technology. Applications of information modelling technologies are increasingly finding their way to the urban everyday: they are used for example in route planning, urban game design and people-finding. These applications represent a paradigm that naturalises technology-induced change in the development of the urban lifeform.

If technology is seen as an agent of change in the context of urban environments, technological development or technologicality in general could be understood to drive a “culture of change” even more widely. The desired smoothness of the everyday urban experience is subject to variation in quantity and quality, depending on the quality and quantity of technological mediation. This development is driven further by overlapping and interlacing of various technologies. Traditional objects in the urban environment are not fixed either, as technologies have expanded the range and amount of these changes and objects significantly. Also the pace of technology-induced change is different compared to, for example, many natural processes that take place in the timescale of the urban environment.

The implementation of a technological innovation is a paradigmatic example of how change actually takes place. Many contingent elements in conditions determine the logic by which technologies come into use. For an analysis of experiential change, it is crucial to focus on the actual everyday experience instead of the idealised experience of a certain technology. This distinction is often difficult to pinpoint, especially because designing technology understandably relies on an imagined and streamlined idea of how the everyday experience

will unfold. In reality, everyday experiences are marked by interruptions, abrupt changes, failed attempts and other irregularities that are difficult to anticipate (Naukkarinen 2013).

Technologies direct and fix attention to certain features of the environment. They are thus affecting how and what of the urban everyday realm is distributed to the sensory perception and thus categorisable for further evaluation (on applying the Rancièrian notion of the distribution of the sensible into everyday aesthetics, see e.g. Highmore 2011). Some technologies enlarge perceptual possibilities within the urban sphere: drones, for example, record visual data from a height above the regular level of human visual perception. These images stimulate interest and elicit reactions by making everyday urban environments visible from previously unseen or rare angles.

Emerging technologies challenge the Heideggerian notion of the pre-reflexive familiarity of the world in everyday life. This is linked to how the new becomes interpreted in terms of and related to that which is familiar. This is true even in cases when there is little or no difference in the resemblance between the new technology and the technology it is replacing. Advancing the implementation of new technologies through relatively small adjustments makes maintaining the prevailing ways of doing things easier, but on the other hand, some unnecessarily demanding and antiquated action patterns might also be retained long past their actual usefulness. This can be seen, for example, in how many of the initial uses and behaviours related to mobile phone use derived directly from using landline telephones, ending up diminishing or even hindering the development of the actual application possibilities and perceived affordances of the portable new technology. These types of anachronisms in user habits might be slight, but their impact grows as they are repeated routinely on a daily basis.

What then, are the stable, long-lasting elements in urban environments and what are the most prone to change? How are the lasting and changing elements determined, what is their relationship and how are they experienced? The theme of “fixed vs. flux” is central in understanding urban change and how it is experienced. There is no uniform, fits-all-types-of-city answer to these questions. The fixed elements are often associated with built elements and spaces, and those in constant change with natural – biotic but also abiotic – elements in an urban environment. However, it is clear that the increase in urban technologies adds more changing elements to the urban sphere. It is therefore important to understand what reactions and patterns are central in coping with change, whether incremental or more radical.

By acknowledging the fundamental role of change, we question the validity of any arguments that rely on the existence of an “original state” or stable equilibrium of human–environment-relations: urban experience (as a systemic whole) has more or less dynamic states, and the experience of stability regarding such a state is always relative. From the viewpoint of everyday urban life this means that, though some experience of stability is necessary for the constitution of an everyday mode of urban life (that is, of its everydayness itself), the exact content of a “particular everyday” (as a contingent constellation of conventions) varies *de facto* continuously. To exaggerate this point, we live our lives under an “illusion of stability”, for the practices we take part in are constantly changing, but this illusion is nevertheless of crucial importance from a practical point of view. In our everyday life, we simply have to be able to rely on certain things – for example that our regular bus route is still operating, that our smartphones still work adequately, that fresh water still is available on tap – though we may even be aware that most of these particular examples probably might not form a part of our everyday life in the far future.

The technological artefact “can give rise to ‘emergent’ mediations” (Verbeek 2008, 259). These emergent mediations can be interpreted through new, unintentional affordances that become embedded into the existing urban environment. In this case, a particular technology or a version of it is the driver of change as it unleashes some previously unactualised or even non-existing potentiality in the environment. These affordances that embed the horizon for human activity, become perceived and interpreted in active engagement with the urban environment in question.

4. Affordances and the Normativity of Everyday Practices

The Gibsonian theory of affordances (see, e.g. Gibson 1979) aims to explain how human activity is necessarily linked to the existing physical, social, and above all functional action-enabling features in the environment. The concept of affordance has come a long way from the context of Gibson’s original formulations and, in fact, an up-to-date understanding of affordances reminds us rather closely of the postphenomenological perspective on technologies and other tools as a constitutive part of human-world relationships. For example, Kiran and Verbeek (2010, p. 417) conclude that “a piece of equipment influences the world to appear for us in a manner that is in accordance with its affordances. A claw hammer [...] affords rock hard hits and pulling things, which points it toward a context that includes nails and spikes, items that in turn afford hitting or pulling. The nails and the spikes stick out from a background, the world, because of the hammer.”

What is particularly important in the passage above is that affordances always belong to certain socio-culturally defined sets of practices, and that they essentially affect our experience of the world. In short, this means that affordances constitute lifeform-specific

ways of both acting in the environment, and perceiving it in accordance with these actions (see Rietveld & Kiverstein 2014). Just as there is no “reality-in-itself” but mere “reality-to-us” (that is, reality as mediated by the various uses and actions characteristic of our culture, see Verbeek 2005), there are no absolute or objective affordances that an environment could provide but merely affordances to a specific lifeform.

Despite this, some affordances may, indeed, be more obvious to a “skilled agent” than others. A “skilled agent” here refers to an actor who has gained expertise in certain socio-cultural practices – that is, who has internalised a lifeform-specific “normal way” of doing things. It is important to notice that such an internalisation takes place also, or even primarily, on the level of embodiment and perception, so that the expertise has essentially become integrated in the agent’s *bodily experience* of reality. As Rietveld and Kiverstein (2014, p. 341, emphasis added) put it, “[skilled agents] do not need to select *reflectively* from the possible actions they can perform, [but] they *perceive* what action the specific situation demands. [...] What the skilled person has learned to do over the years feeds back into the way the meaningful world appears to [them] *in perception*.”

The possibility of experiencing certain affordances as “obvious”, gives rise to the emergence of a lifeform-specific normativity of practices. Indeed, the normativity of possible uses and actions is closely related to the “normality” that is constitutive of practices: a certain regularity and relative stability of behavioral patterns is the basis for experiencing diverse uses and actions as both meaningful and evaluable. In short, the normative evaluation of behavior is essentially bound to a specific situation in which socio-cultural conventions apply, and the notion of normativity that is “applicable to a skilled individual’s engagement with affordances comes from the individual’s ability to distinguish correct from incorrect, better from worse, optimal from suboptimal, or adequate from inadequate activities in a specific, concrete

material setting” (Rietveld & Kiverstein 2014, p. 332). Not all possible actions are thus equally correct or adequate, but the potential realisation of available affordances is always subject to context-dependent evaluation, which takes into account subtle social nuances, as well as the material conditions of the situation.

However, such “situated normativity” (see Rietveld & Kiverstein 2014) pertains merely to certain types of affordances, namely those that already have an established role in a particular lifeform. Indeed, the notion of situated normativity provides an adequate description of how certain uses and actions become “self-evident” and “normal”, and also of how the experience of such “self-evidence” and “normality” regarding these uses and actions is carried over to the following generations. Costall’s (2012, p. 91) account of “canonical affordances” is particularly illustrative of this matter:

The meanings of things can indeed become objectified and normative. Artifacts embody human intentions. Indeed, it is through the tacit, embodied understanding of the “canonical affordances” of things, as much as through explicit representations, that young children enter our cultural world. [...] The concept of “canonical affordances” itself alerts us to those important cases where the affordances of some thing are not simply shared between people but also normatively predefined.

The concept of canonical affordances however falls short of explaining how, exactly, the process of meanings becoming “objectified and normative” could or should *itself* be evaluated. In other words, it seems that the dimension of normativity comes along only if an affordance becomes canonised, but the meta-level question of whether or not it is appropriate for a certain lifeform to have a particular affordance as “canonical” cannot be answered.

For example, let's say that it is entirely "normal" for the people within a particular lifeform to make use of an affordance, provided by an artefact called an airplane, in order to travel long distances on a regular basis for the sake of recreation. Such a canonical affordance itself appears, in a sense, to be situated outside the scope of genuine normative assessment, despite the fact that the excessive realisation of such an affordance essentially contributes to larger processes that may eventually be fatal to the lifeform itself as a whole, and to the entire planet.

This is mainly due to certain notable limitations concerning the concept of "situated normativity", for it essentially operates at the "micro-level normativity" of individual behavior *in* a particular socio-materially conditioned situation, but it does not provide an adequate basis for addressing the "macro-level normativity" of the varying socio-material situational *conditions themselves*. This apparent shortcoming regarding the notion of affordance may have something to do with its origin in ecological psychology, where normativity has, after all, a rather limited scope of validity, as the ecological system is supposed to be self-organising and to steer itself accordingly.

Such questions related to replacing existing, perhaps detrimental canonical affordances with new, more appropriate ones illustrate the fundamental challenge with the theory of affordances as a whole: how is it possible to evaluate and compare different affordances themselves, and the consequences that their full-scale utilisation might have? In particular, how is it possible to evaluate unforeseen affordances that involve a potential to change the lifeform-specific conceptions of normality altogether? The possibility for carrying out such an evaluation may well be very beneficial and also rather urgent, since ever-increasing technologicality will for its part drastically affect which particular affordances will be utilised on a large scale, and thus gain "canonical status".

Indeed, from the viewpoint of change and innovation, it is particularly interesting to ponder how the emergence of novel technologies gives rise to certain unforeseen environmental affordances and even promotes them, but at the same time might displace or erode some existing ones. For example, one can think of GPS-based navigation applications that enable us to find our way and move freely without the fear of getting lost both in familiar and strange environments – both in our home town and in the cities we have never visited before. Indeed, wayfinding has never been easier, and as practically everyone carries a localizable smartphone with them nearly all the time, the ease and everydayness of using such an application provides its user with a comforting sense of security.

From the viewpoint of affordances, the rise of technological navigation aids has opened up numerous new environmental affordances, as previously out-of-reach places are now effortlessly and safely accessible to more people. However, the triumph of navigation applications has not resulted in a mere increase in the number of available affordances, but it has already caused a major change in which environmental affordances are *de facto* utilised. This has to do with the fact that the applications are transforming the way we experience our environment remarkably – that is, the way we distribute our attention and the way we construct various “mental maps” in order to orientate ourselves. In short, they even make us “blind” to many such environmental qualities and properties that we would otherwise notice and pay attention to, as Grabar (2014) has noted: “With their small screens and egocentric perspectives, mobile navigation systems function like blinders, reducing the landscape to the width of a street. They narrow the world.”

5. Opening and Closing Affordances

From the aesthetic point of view this may be worrisome, for these particular environmental qualities and properties can be exactly those elements that make the surroundings distinguishable and identifiable by comprising the character and the idiosyncratic experiential quality of the local environment. If such elements remain more and more “invisible” to us – that is, due to a change in the way we experience our surroundings – the related urban aesthetic values are also increasingly ignored. In other words, continuous and excessive use of mobile navigators may, in fact, “narrow the world” in such a way that it seemingly includes less aesthetic value than before. Of course, the material basis of the aesthetically valuable qualities and properties remains unaltered in the environment, but there is no point in discussing these potential values without an experiencer who is actually capable of experiencing them.

As became clear with the analysis of a “skilled agent”, the way people make use of affordances in their everyday life essentially affects their skills that eventually define their relation to their environment – “the way the meaningful world appears to [them] in perception” (Rietveld & Kiverstein 2014, p. 341). In other words, people are able to learn new skills, but they are likewise able to forget their existing ones: if traditional navigation skills are no longer needed and thus used, such skills will fade away. Such a tendency has already been verified in an empirical research, the outcome being that the “users of navigation tools have poorer memory of surrounding scenes and less accurate configurational knowledge of travelled routes, compared with people who use maps or directly experience the routes” (Ishikawa 2016, p. 124).

The message here is not that the emergence of present-day navigation technology and its related applications would be either good or bad, but that it has rather far-reaching

and perhaps irreversible consequences concerning our relationship to the environment, and the way we experience reality in general. For example, as Ishikawa (2016, p. 133) points out, many important skills other than mere wayfinding are at risk: “As long as spatial thinking has pedagogical and practical importance for our society, the issue of geospatial literacy in the age of satellite navigation is a topic that calls for continued discussions.” Additionally, if the ability of navigating in the urban environment by directly experiencing it slowly but surely perishes, this development renders quite useless a whole branch of urban design that has focused precisely on the questions of *legibility* and *continuity* in cities – that is, on the question related to their *understandability* in general (see, e.g. King & de Jong 2016).

The features of legibility and continuity are also of central significance regarding the aesthetic quality of urban environments. This connection can, in part, be traced back to the overall functionality of the urban environment, and to its related aesthetic values and meanings. For example, the environmental feature of “being orientable” presupposes the feature of being legible, and being orientable in itself can be seen as a central function of any urban environment. Then, at least according to the “functional beauty” argument (see Parsons & Carlson 2009), part of the aesthetic value of a city stems precisely from its appropriateness concerning its function of being orientable. Hence if we let go of the requirement for cities to be orientable (on the basis of direct experience and legibility), we will also most likely lose those aesthetic values that originate in this particular function.

The legibility of an environment, in turn, can be divided into two “subspecies”, according to the role of conscious attention and action when finding one’s way in the city. The point here is that one can orient in the city either by referring to maps, verbal instructions, sets of landmarks, vistas and other visual cues, or by the means of a more direct and straightforward method of simply being acquainted with one’s surroundings. Eventually this

division comes back to the question of what, exactly, does it mean to “know” a route in an environment, for “knowing” can signify multiple ways of relating to an environment. For example, on the basis of an empirical study, Gale *et al.* (1990) call for a clear distinction between knowledge *about* a route and knowledge of *how* to navigate the route.

This kind of division in knowing one’s movement in an environment bears a clear resemblance to the two modes of relating to it aesthetically – the tourist’s gaze, and engagement based on experiential strangeness and familiarity, respectively. For example, Tuan (1977, p. 183) describes the two branches of environmental knowledge, and also their aesthetic relevance, as follows:

Abstract knowledge about a place can be acquired in short order if one is diligent. The visual quality of an environment is quickly tallied if one has the artist's eye. But the “feel” of a place takes longer to acquire. It is made up of experiences, mostly fleeting and undramatic, repeated day after day and over the span of years. [...] The feel of a place is registered in one's muscles and bones. [...] Knowing a place, in the above senses, clearly takes time. It is a subconscious kind of knowing.

On the basis of this, there is a clear difference between the domain of visual or mental images and the bodily engagement with the materiality of an environment. This kind of analysis also provides an improved ground for assessing the potential experiential repercussions that widespread usage of navigation applications might eventually have. For example, if navigation applications rely on visual representations of the surroundings – as by and large they now seem to do – does this emphasise in a detrimental way the domain of abstract knowledge about the environment and finding one’s way in it? And further: is knowing an environment through bodily engagement now under threat, compared to other ways that are based on objectifying images of the environment?

These are, in part, questions of contingency that call for empirical analysis. It is, for instance, important to empirically investigate how people *de facto* become acquainted with their surroundings: do they use navigation applications merely as “early stage” tools, or do they rely on them more continuously in their everyday life? If one uses them in order to familiarize oneself with a strange environment, this can even remarkably enhance the bodily engagement with one’s surroundings, but if one keeps on using them without more direct experiential contact with the environment, the level of engagement is likely to remain minimal.

To be sure, the fact that navigation applications have become very common does not merely pose a threat to our environmental relationship, but also opens up various new possibilities of using and experiencing our everyday surroundings. These unforeseen environmental affordances can certainly include notable aesthetic potentialities, so that the canonisation of such affordances might improve the quality of our urban experience even quite drastically.

The aforementioned freedom of movement may, for example, give rise to a new kind of aesthetic sensitivity or openness to aesthetic potentialities inherent in our urban environments. In particular, when one no longer depends solely on the information provided by roads, buildings and other structures to orientate oneself in a city, the urban landscape and its components (understood widely as the entire sphere of perceivable entities) can cease to function as mere guiding features. Consequently, they can be approached with increased enthusiasm and curiosity, providing an enhanced possibility of experiencing urban aesthetics anew, both at the level of detail and in terms of conceiving the city as a systemic whole, with certain dynamics of its own.

Furthermore, thanks to the possibility of “getting lost safely” provided by the navigator in one’s pocket, one is perhaps more prone to experiencing aesthetically relevant features that are characteristic of *urbanity* as a phenomenon. These kinds of features include, for example, a certain perceptual inexhaustibility in the form of a “surplus of meaning”, suggesting that there is always more to a city than a single human being could possibly experience and know thoroughly; hence, “in some respects the city remains a perpetual mystery, just as great art remains a mystery – extending beyond our capabilities” (Haapala 2003, p. 21). Moreover, this kind of vastness and radical otherness associated with the city may give rise to an experience of *urban sublime*, in the sense that “the city’s human aggregates [...] inspire ambivalent feelings, mingling exhilaration with a threat to selfhood” (Den Tandt 2014, p. 127). Such an experience of urban sublimity has its base in conceiving the city primarily as a *human context* of massive complexity, not as a mere collection of impressive physical structures, for as Den Tandt (2014, p. 127, emphasis added) points out, “just as sublime landscapes hint at a divine presence in nature, cityscapes spark off epiphanies about *multitudinous humanity*”.

Summarising the argument so far, we should not remain passive or helpless in the face of emerging technologies, silently accepting all possible implications, but we should have more and better means to evaluate the pros and cons of each technological device or application more comprehensively. In particular, the experiential and aesthetic repercussions of various technologies have so far escaped further examination, perhaps due to the difficulty of indicating the exact mechanisms in action and the hardships in verifying the concrete effects that a particular technological solution might have.

These related difficulties do not, however, in any way decrease the importance and the urgency of such a task, but on the contrary, despite the apparent speculativeness inherent

in the philosophical analysis of urban experience, it is precisely the sphere of experience that eventually “determines” individual behavior in the urban context, and thus the urban future as a whole. The theory of affordances has proven to be somewhat insufficient regarding this matter, and it needs to be further developed or supplemented with an alternative theoretical point of view.

In short, aesthetics has a sort of “double role” in the formation and the evaluation of our everyday practices that, in a way, can be seen comprising a very diverse set of “canonical affordances”. First, aesthetics has much to do with the “constitution of normalcy”, understood as the capability of perceiving various environmental affordances “correctly”, and acting accordingly. This means that the everyday dimension of aesthetics has a remarkable role in the process of conditioning an agent to perceive *certain* affordances and *not* others; perceiving affordances is in this sense always “aesthetically conditioned”. This is the relevance of aesthetics at the micro-level of situated normativity.

Secondly, examining the wider aesthetic and experiential repercussions of different technology-laden or -induced affordances provides a way to address the questions of the macro-level of normativity. By asking what kind of aesthetic and experiential implications and outcomes particular “normal practices” might have, one is able to gain a renewed perspective that is *external* in relation to the concrete situation in which the socio-materially conditioned individual necessarily assesses the normativity of their actions. Such an aesthetically and experientially-informed point of view regarding technology-related affordances essentially contributes to evaluating “the politics of artefacts”, thus complementing and consummating the critical perspective that Winner (1980) called for in his seminal article decades ago.

For example, the above-mentioned navigation applications are used in a particular situation in which certain social norms apply. The application may, indeed, be used in a way

that is assessed as “correct” or “incorrect”: the usage of the application can be potentially insulting, if one ends up ignoring one’s companion due to an excessive focus on the device. In addition to this, the application may have harmful experiential effects even though it is used according the prevailing norms: one can eventually lose one’s ability to read the environment and its cues, if one relies solely on aided means of navigation. These kinds of repercussions cannot be accessed through the conditioned situation itself, but from a wider perspective that examines the socio-material conditions themselves, and their foundation in a particular life-form.

6. Conclusions

In this chapter, we set out to study the experiential consequences of the reliance on and use of new urban technologies. One aspect is related to whether technologies ultimately widen or limit possibilities or affordances in the everyday urban environment. This means understanding in different contexts, whether technology manifests as an “enabler” or a “filter” for the everyday urban experience. We have been building a general theoretical framework, but the focus in our examples has been on technological solutions that take part in contemporary wayfinding practices.

Experiential factors are proving to be increasingly important in understanding what types of urban environments enable human flourishing. The experiential consequences of change in the urban environment necessarily affect relationships with the city. Adaptation skills and suitable coping mechanisms become more central and they are developed partly out of existing, established and familiar habits and more intuitive modes of action based on

perception and directly engaging with the environment. Urban life as such requires an impressive amount of different types of skills that are learned in practice.

Naturally, there are still elements relating to urban wayfinding that require direct – or, less mediated – attention to the features and cues of the environment: these are often linked to reacting to the movements of other human or non-human users of the urban environment. This can include, for example, assessing visible distances, co-ordination of movements when passing by others or reacting to traffic lights as a pedestrian. Freedom to choose where to direct attention in the urban space is illusory or exists only to a limited extent, since one is inevitably bound to pay attention to the cues of the environment. Over-reliance on mediated knowledge about the environment has been considered to be a risk for the safety of an individual, if it takes attention away from observing threats in the environment.

One further question is to consider how technological convergence in general affects affordances and urban experience. Convergence refers here to the deep integration of multiple technologies and can be seen as one prominent sign of the densification of technological development as more interlinked features are covered by fewer interfaces. Converged technologies also seem to centralise experiences through the use of fewer interfaces, and thus make processes less explicit from the user's perspective.

Stable and static elements are complemented by changing and dynamic elements within the urban lifeworld. Adapting to change requires flexibility but it also affects preferences, which often change far more slowly than the actual pace of change in urban environments. How this type of "acclimatisation" takes place, is a topic for further study. What we propose, is however, that aesthetically based and manifested preferences and their relation to urban life should be taken into account when implementing new urban technologies. Adding new features to urban systems is not only an interesting problem from

the design and planning perspective, but also from an experiential point of view: one becomes aware of many old habits and preferences when new technological elements are introduced into existing conditions.

Acknowledgments

We are thankful for close reading and insightful comments to the editors and the anonymous reviewers, and wish to thank especially Michael Nagenborg and David Murakami Wood.

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