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# Fair framings: arts and culture festivals as sites for technical innovation

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**Abstract** The fascination and thrill of arts festivals relates to their capacity to host the unexpected, surprising and new. The economic model of *novelty bundling markets* presents a rare attempt to account for the potential impact of festivals on innovation. Its cognitive conception of festivals as sites of economic evolution offers a point of departure for this paper. The economic model is criticised and further developed, especially in two respects, drawing on sociological studies on science, technology and society and on empirical data from two cases of innovatively used lighting technology in festivals. First, it is argued that festivals offer a *fair space* for the simultaneous discovery, display and valorisation of the new that is produced by performers, curators and audiences, and by innovators, intermediaries and consumers alike. Secondly, the production and consumption of newness in festivals is linked to the specific way in which their socio-material setting facilitates what has been termed *framing* and *overflowing* of cognitive formats. Finally, the analysis sheds new light not only on the innovative impact of festivals but also on the scholarly reserve to engage with this field of research.

**Keywords** Festivals · Innovation · Novelty bundling markets · Overflows · Investments in form · Fair space

## 1 The problem: recognising and valorising the new

> The new must be brought into the familiar world and enter into exchange with prior experiences. It must be given meaning and evaluated. The new must be

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> different, but to be recognizable as the new, it requires observers to make a concentrated effort. (Nowotny 2008: 2).

Before groundbreaking ideas, novel artefacts or unfamiliar processes can be considered as innovations they have to pass a cognitive test. Only if they are recognised and valorised as 'new' and 'better', in comparison to what already exists, will they successfully enter the world (Johannessen et al. 2001; Braun-Thürmann 2005; Marz 2010; Canzler and Marz 2011). Studies on science, technology and society (STS) have highlighted how meaning-making results in the emergence of networks of actors and artefacts that allow the social integration and stabilisation of the new. Here, socio-material settings are crucial as the material composition and social fabric of the situations in which the new is conceived influence how it finds spokespeople, audiences and users (Akrich et al. 2002a, b). As networks emerge around the new, the latter links and makes sense to more and more people and things. The transformation of an invention into successful innovations can thus be conceptualised as a process of network formation based on the successful "translation" (Callon 1986) of irritation into meaningful information that makes a cognitive impression, engages new audiences and stabilises the new (Hutter 2011). Yet, the shaping of such information is not trivial. It requires "investments in form" (Thévenot 1986, 2007) and "framings" (Bijker 1987, 1992; Callon 1998).

As I will show in the following, festivals consist of and provide a variety of such investments. Sharing historic roots with fun or trade fairs, they offer hybrid settings in which the presentation and consumption of novelty represent a key characteristic.

My argument is twofold: After mapping the theoretical field, I outline how the recognition and positive evaluation of an innovative use of lighting technology was facilitated by the specific socio-material settings of two different festival performances. I show that festivals provide *fair spaces*—in the multiple sense of the word—as they are not only fun places but also offer different social groups open access and a variety of opportunities to share experiences and encounter the new. My second argument is that festivals promote very specific formats and framings for the production and positive recognition of the new without providing a robust management of overflows.

## 2 A micro-sociological perspective on "novelty bundling"

Festivals have received little attention for their possible impact on innovation although the presentation of novelty is considered one of their key features (Crompton and McKay 1997). Among the economic accounts and reports on festivals (Frey 2003; Cambridge Policy Consultants November 2011), Jason Potts's approach stands out (2011). Introducing the concept of *novelty bundling markets*, Potts argues that festivals, like blogs, fairs, magazines or other cultural institutions, contribute to economic evolution as they reduce costs on the demand side. This argument is based on the assumption that novelty is not scarce but abundant; that it confronts the consumer with the difficult, costly and time consuming tasks of staying updated, and engaging in comparison and selection activities. *Novelty*

*bundling markets* are conceived as sites for stimulating and shaping consumer behaviour and consumers' interests and demands for the new. As such, they offer a "cognitive mechanism of reframing" (ibid: 170). Due to the bundling that is performed by experts who preselect, arrange and present the new in appealing ways and formats, festivals offer a comparatively cheap and enjoyable opportunity to encounter novelties. Curators thus make the new more accessible to visitors as they offer settings for forming and comparing opinions about the new things and ideas on display. Festivals can thus be considered as devices that bring the new into an exceptional yet familiar world, one that is attractive, requires little effort, and is relatively risk-free.

Although Potts' evolutionary perspective breaks with traditional economic models, his concept still reinforces categories and boundaries that get blurred when looking more closely at interaction in festivals, or when drawing on ethnographic accounts on innovation from the research field of STS. The activity on the demand side might prove quite innovative (Bijker 1992; Oudshoorn and Pinch 2003), making it hard to distinguish its relevant actors from those on the production side. In addition, festivals differ considerably in terms of their formats, their claims to innovativeness and their creativity in practice. The most traditional festival might come up with innovative techniques to reproduce its familiar atmosphere and scenes (Edensor 2012). This is even more true, since in festivals, as in any other public performance, displays of newness can fail and consequently put to the test the new ideas and things, which they were meant to demonstrate (Collins 1988).

Against this background, it seems useful to pay closer attention not only to the successful "cognitive mechanisms of reframing" as they are facilitated by bundling experts, but to also take into account potential overflows as the flip-side of framing activities (Callon 1998). With regard to innovation, overflows can be described in negative terms as externalities, which occur in the course of invention and valorisation of the new (Marz 2010). They can as well be considered in positive terms as the surprising and stimulating side-effects that might spark creativity and invention and thus contribute to an innovation. Like framings, overflows take shape in material arrangements, like designs and their visual representations, and in semantic forms, like interpretations or ideas that can be communicated.

In view of the presentation of abundant novelty, the provision of easily accessible, comprehensible and well presented information is costly as it requires the management of overflows (ibid, see also Czarniawska and Löfgren 2012) leading to more framing activities. In studies on the social construction of technology and on innovation, the latter are also conceptualised as "problem–solution-framing" (Marz and Krstacic-Galic 2010) and "technological frames" (Bijker et al. 1987; Bijker and Law 1992). These concepts explain how innovators can, despite their different views and professional backgrounds, succeed in finding a shared perspective on why and how to deal with the new and its problems despite the "interpretative flexibility" of the new technological artefact in question. Notions of framing also correspond with the broader concept of "investments in form" (Thévenot 1986) as the framing of newness and the management of overflows require effort and take time. Such investments can be understood as intentional acts

of producing knowledge and spreading information through artefacts and semiotic representations.

It is no coincidence that laboratories are prime locations for the production of newness and innovation. In the enclosed and well-equipped space of the lab the new can be found, singled out and tested in an environment that provides both, a protected niche for research and development as well as the resources for recognising, identifying and communicating the new and its value or advantages. The so-called laboratory studies (Latour and Woolgar 1986; Pickering 1992) highlight the close relation of socio-material settings and the production of scientific evidence. The new is recognised, identified and reproduced with the help of technical tools or inscription devices. The challenge is then to translate locally grounded information about the new into mobile bits and pieces that can travel the world (Latour 1983, 1986, 1990; Lynch and Woolgar 1990; Law 2002). Hereby, investments in form concern the accurate and effective *presentation* of new results or products to audiences outside the laboratory and its *representation* in displays, graphs, images or articles. In the laboratory space, overflows are either recognised as potentially interesting and new information that can be transformed into better results, i.e. reinvested, or they remain unnoticed, as they are considered as unimportant and unintended externalities. In the latter case, overflows will run dry behind the closed doors of the laboratory and will never be presented to an audience or wider public.

Yet, as Thomas Gieryn (2002, 2006) shows, such knowledge production is not restricted to closed laboratories. The presentation of new evidence, ideas and things also takes place in more open settings. As the spaces differ, so do the particular investments in form and potential audiences. Michel Callon and Fabian Muniesa contrast laboratories as the closed sites of controlled experiments with platforms and in vivo experiments that are less rigid in their "framing" and therefore show an increasing risk of "overflowing" (2007: 182–83). In this respect, festivals appear as sites that forego a strict and costly framing while taking or even enhancing the risk of irritation, surprise or divergence—in short, the kind of unexpected consequences that are elsewhere considered undesirable distractions or externalities.

Summing up, the concept of *novelty bundling markets* seems an important point of departure but falls short of two aspects: First, it does not account for the overflows of ideas, experiences and information that are characteristic of festivals and mark them as potential sites not only for the consumption of novelty but also the emergence of newness. As my observations and interviews show, the positive effects of arts and culture festivals are not restricted to the consumer side only. It is true, festival goers profit from the festival experience and their encounters with the new as they form opinions and new ideas, but so do producers, artists and mediators who create and present their work at festivals. What Potts terms a reduction of costs can thus be observed among actors and spectators alike. Secondly, the novelty bundling of curators might facilitate the immediate positive response to and favourable valuation of newness. Thereby, curators are not the only actors to be credited for their investment in form. As the above cited STS-studies show, the emergence and translation of newness very much depends on particular local assemblages and material arrangements of actors and artefacts and the ways in which they link and relate to each other. In this respect, the model of *novelty*

*bundling markets* seems too broad to capture the specificity of festivals—as opposed to magazines, blogs or fairs—and their specific impact on encounters with the new and the emergence of innovation networks. In the following, I will therefore refer to the socio-material settings of the performances as *fair spaces* to highlight their openness to different audiences and actors, and the room they provide for the emergence of the new and its recognition, interpretation, valorisations or failure.

## 3 Exploring innovative highlights

This analysis is based on an explorative study conducted between 2008 and 2011. The study focused on innovative uses of lighting technology in urban night-time events and on lighting industry trade fairs.[1] The cases were selected on the basis of three criteria. Firstly, the festival events had to present an innovative application of lighting technology. Secondly, I chose the most dissimilar festival frameworks from the cases that I studied in order to widen the scope of my findings rather than limit my claims to the particular case of "festivals of light". Thirdly, I chose the most visible events.

Research on multi-sited live events bears a risk. Before a festival you can only acquire partial information about what the actual events will be like. Once you go there, you will miss everything that is staged simultaneously and that cannot be repeated. Making a virtue out of necessity I pursued a complementary strategy. I "followed the actors" (Latour 1996) and their creative work processes by conducting interviews. But I also followed the joint attention of the public (Schmidt and Volbers 2011) by paying attention to the critics' choices and the festival visitors who 'voted with their feet'. In doing so, the audiences guided me and facilitated the selection of the two events discussed below.

Mixed methods were applied to account for the heterogeneous data. Participant observation during the festivals and eight semi-structured interviews by telephone and in person with curators and participants provided data on the design practices and the actual presentation on site and in public. In addition to engaging in participant observation, I also gathered data from websites, press kits, and festival documents in order to assess the semantic framing of the festivals as well as the public responses to the events. The text data, short video clips, images and audio files from festivals were then organised, structured and analysed in an iterative process using the qualitative data analysis software NVivo (Welsh 2002).

Sharing views with co-observing festival participants and acknowledging their disappointment or excitement during the festivals allowed me to check my own findings and reflect on my theoretical position. The approach illustrates my conception of a research site as something that is not *found* but *co-created* by observed and observer alike. Just like stages or laboratories, the public spaces in

[1] In 2010, I attended the *Transmediale* in Berlin from February 2–7 and the *Luminale* in Frankfurt/Main from April 11–16. I also did research during the Lyon *fête des lumière* in December 2010. I visited the *Lichtfest* Leipzig in, the Berlin *Festival of Lights* and also got get a glimpse of the *Blackpool Illuminations* in the North of England (see Edensor 2012) a traditional event presenting an illuminating counter example.

which the events took place were neither 'natural' (Gieryn 2006) nor artificial. Instead, they also functioned as ephemeral *fair spaces*— spaces that were produced by many and were heterogeneous enough to host simultaneously festival fun, commercial display, experimental performance, and research activities.

## 4 A "Global Rainbow" of lasers and a "Hive" of LEDs

At first sight, the two case studies seem to have little in common. One took place during the *Transmediale* 2010, a festival for media art and digital culture in Berlin. The second took place during the *Luminale,* a biennial "festival for light culture" in Frankfurt/Main, an event that accompanies the world's leading fair for lighting technology, the *Light + Building*. The settings differ considerably in focus and structure but facilitated events in which lighting technology was applied in new ways and arrangements.

As explained above, the public pre- and review by spectators and critics singled out two works that received particular public attention. During the *Luminale*, an overwhelming number of people told me to see their favourite project "Hive". The project team that ran the installation on site got equally enthusiastic feedback. The installation formed an interactive system of 1600 light emitting diodes (LEDs) and sound that responded to visitors' jumps on a platform via a digital interface. It received considerable media coverage in the press and TV.

Likewise, the *Transmediale* laser project "Global Rainbow" was highlighted as the flagship project of the festival. It was mentioned in one-third of the documented press articles on the festival and was the most photographed work, which is not too surprising as it was also the most visible project. The "Global Rainbow" consisted of seven paralleled, modified industrial laser beams that spanned over a distance of more than three kilometres over the centre of Berlin to form a rainbow-like bundle in red, orange, yellow, green, cyan, light blue and dark blue.

Summing up, within their particular festival settings, both performances were regarded as outstanding and spectacular by the curators, the media and their different audiences. The production of a *fair space* was facilitated as they were both performed free of charge in urban spaces and visible from the early evening onward for at least seven nights in a row. They are thus comparable with regard to their visibility, accessibility and impact within their festival frames even though the festivals themselves differ considerably as to the financial and organisational resources and socio-material framings they provide.

### 4.1 Light investments in new forms

Before entering the fair space of the festival setting, the light installations had to take shape in material forms and local arrangements. In the case of the "Global Rainbow", the artist's idea to reproduce a natural event found its form in a three-year process. First she had thought of using water and light, a design idea that proved too complicated. The second attempt to create the image of a rainbow on a large-scale billboard failed due to a lack of funding. Finally, when the artist saw a

laser show during a concert, she knew how to realise her vision. This was when a show laser company entered the scene. The small team became central in developing the innovative installation. The rainbow first took shape in their laboratory in Cologne, then on site where the team spent hours arranging and installing six industrial lasers in a way they were not built for.

Their investment in form was primarily aimed at producing an impressive large-scale event. But their problem–solution-framing resulted in very small-scale material decisions adding up to a welcome challenge for the laser team:

> To do the seven colours…They were really challenged to create the spectrum. […] I mean, they are breaking boundaries—the way they are doing it. (Artist, interview, 2010-01-31)

Especially the mixed colours, orange and yellow, were difficult to create. Here, two laser beams with two different wave lengths (628 nm/532 nm) were superimposed and paralleled so that their wavelengths met in the middle somewhere around 580 nanometres. This created a second problem: The beams had to remain perfectly aligned over the long distance. Otherwise, not only would the colour-mix dissolve, but also the four millimetre beams. To prevent them from opening up "like cornets" over the distance and turning into a mashed up "blur" the team experimented with mirrors and reflector systems inside and outside the laser cases compromising a bit of their output.

After hours of laboratory work in a clean-room where no particles in the air could distort the laser beams, the results were tested on site. The set-up, including scaffolding, laser cases and mirror systems had to be calibrated to respond to the local conditions. The mirrors for redirecting and focusing the laser beams horizontally were replaced several times as they did not perform as expected due to the cold weather. Cold on the edges and hot where hit by the laser, the mirrors failed to reflect the light in the angle they should. Finally, the "translation" or "export" (Latour 1983) of the laboratory arrangement into the world was only achieved after considerable investments in time and form.

The same applies for "Hive" where the sensual appeal of an imagined atmosphere became an integrating and driving force in the design process that was equally dependent on the interplay of different material components and their integration into a specific local setting.

The installation emerged from an interdisciplinary student project involving media and lighting design courses of a nearby poly-technical school. As the lighting design professor who accompanied the project recalls, the whole development was informed by a student's project proposal that conveyed the idea of interactivity and atmosphere in an intriguing computer rendering.

> You look at the image and find it just beautiful. […] If we had already started at an early stage to think 'can it be done?' we probably would have stopped the project. We would have had to stop it. (Professor, telephone interview, 2011-09-07, my translation)

Lacking photos of the still non-existent installation, the computer rendering that was also used for the festival program served as a wildcard—a motivator for developers

and audiences alike to engage in the project. The image also played a generative role as a benchmark for the design. The sparkling light points were identified as crucial ingredients which led to a conse-quen-tial material decision: Although the event's sponsor, a well-known manufacturer of lighting technology, had offered sky beamers for free, the student team decided to work with LEDs and the school bought the equipment.

As with the lasers, the next challenge was to find an arrangement in which the light source would only act as one component among others. In this case, the task was to create a digital interface for connecting sound, light and platform—a complex task:

> This is what makes the project special. Just switching LEDs on and off is easy. But controlling 1,600 LEDs individually so that every pixel corresponds in brightness and colour to what you want and adds up to the whole picture that is something special. (ibid)

The design process was a joint investment in form. The manufacturers provided theoretical know-ledge about LED and software but lacked practical experience on how to apply it. That gap was filled by the students' month-long time investment. Trial and error helped them to develop not only the desired outcome but also their own expertise in building the innovative interface. The sparkling also posed a low-tech challenge: Light diodes have a reverse side that does not shine, but the three dimensional "Hive" was supposed to sparkle all the way around. The question was how to secure the LEDs in the 3D installation so that their light would radiate in all directions. Again, the students came up with a solution that the lighting design professor described as "simple and beautiful". In time consuming manual work, they cut out 3,200 aluminium strips, bent them round the LEDs and attached each of them with cable binders so that the light was reflected in all directions.

Summing up, both teams spent a lot of time and effort on shaping the material form of their performance products. Their "bricolage"[2] with LEDs and lasers resulted in installations that can be considered *innovative*, not only because technological artefacts and other materials were arranged in a new way, but because these arrangements were perceived as new and spectacular and appreciated in the moment of display, as I will outline in the following.

### 4.2 Encounters with the new in *fair spaces*

The recognition and valorisation of the two innovative installations was marked by the specific setting of the festivals. As stated above and expressed in the notion of *fair spaces*, the cognitive framing of festival situations is marked by an openness that allows for overflowing encounters with the new, overflows that are manifested in spectators' reactions or interpretations.

[2] They way in which students and laser team approached their project appears like a short version of more famous accounts of innovation that have been described in terms of "bricolage" (Gorman and Carlson 1990; Garud and Karnoe 2003) and "distributed creativity" (Miettinen 2006).

In both cases, the location of the event was considered as crucial and the curators of both festivals helped the project teams to find their perfect settings. For the *Transmediale*, it was a lucky coincidence that the festival venue also presented a great point of departure for the lasers. From here the beams could stretch in a straight line over prominent and highly symbolic public places and buildings like the government district, Friedrichstrasse, Unter den Linden and Alexanderplatz. This route covered crowded tourist places and thereby provided good opportunities for the creation of powerful imagery showing the lasers overarching the famous museum island by the Spree River or the lightly snow-covered area in front of the German parliamentary building. Pedestrians, tourists and of course the festival team took advantage of the spectacle by taking pictures and thus reproducing the event, or by interpreting it in their own ways. An elderly couple on Alexanderplatz told me that the lasers connected the east and west of the formerly divided German capital. Some young people knew about the *Transmediale* and explained they would follow the beams to find an electronic music party where they originated. Others followed the rainbow without knowing the festival and asking the laser team questions about the set up. As explained below, I consider these reactions as overflows as they exceed the framing of the *Transmediale* and prompted externalities in the form of photographic and narrative accounts of the new.

In the case of "Hive", a green strip of the former ramparts of the city was identified as the perfect location for the production of a *fair space*. Easily accessible for the festival audience and surrounded by darkness, the sparkling LEDs could be applied to their greatest effect, and were even reflected by a pond and contrasted by Frankfurt's illuminated skyline in the background.

Yet the installation required more than contemplation.[3] To make sense of "Hive", the visitors had to interact with the project by jumping on the platform to see the LEDs react, or by walking around the pond to experience the structure. As the professor points out, they were an indispensable part of the performance:

> The total work of art (*Gesamtkunstwerk*) was the special thing about it—starting with the nightly interaction at the lake, the reflexions in the water accompanied by sound, *the thousand people standing around it*. The happening that emerged, that was the real great thing. The LEDs alone were just a banal technical task. (telephone interview, 2011-09-07, my translation)

The importance of the crowd as a factor of success highlights the co-productive *fair* nature of festival innovation. Neither the curator nor the presenters could have predicted the success of the work in advance. This becomes even more evident when looking at another innovative student project that was on display during the *Luminale* but did not pass the audience test. Here, the performers received bad feedback and were even insulted by visitors as their show did not match the expectations that had been raised by the description and image in the festival programme brochure.

[3] The co-production of a highly atmospheric fair space also relates to what Walter Benjamin described as the "tactile" rather than "contemplative" reception of the art work (Benjamin [1936] 1979).

The same is true for the "Global Rainbow". Despite their preparatory work, the laser team could not be sure of their success. "Let's see", was the humble statement of their manager one night before the festival opening:

> There are a lot of ideas you can have. But first, this is the basic test here. When this one is done and everybody knows exactly how it is done, then we can develop ideas for the future. (Conversation. on site, 2010-02-01, my translation)

In this, the audience reaction was one thing, mundane factors like weather conditions another:

> Today we have clear air, can you see? … It is really very clear. If it is snowing to-morrow or the air is more humid, the whole thing will be ten times brighter. (ibid)

Thus, the performance provided a last test and went well beyond the experiences that the presenters could have gained from clean-room and workshop tests. When on the opening night of the *Transmediale* light snow provided the perfect conditions for the "Global Rainbow" and reflected the coloured laser beams over the heads of a large crowd of spectators, the new was appreciated by participants and press as a "magic moment" (see Nedo 2010-02-03)

*Fair spaces* are thus marked by an openness that is facilitated by their specific socio-material settings and interactions of heterogeneous groups of participants and technical artefacts. Due to their openness, *fair spaces* are difficult to control and their outcomes and effects hard to predict. Nevertheless, they seem to fulfil the function of "obligatory passage points" (Callon 1986) as they offer a point of reference for negotiating meaning on the basis of a joint but heterogeneous experience of the new. In this, the innovative use of technology in festivals differs from other "displays of virtuosity" (Collins 1988) as the festival performance presents the real case. There is no more representative setting the innovators might refer or resort to if things go wrong. Within the festival framework innovative projects get a fair chance but there are no alternative audiences or weather conditions for a revised recognition or appreciation. The *fair space* of the festival provides the arena that counts and allows for the simultaneous production and consumption of the new.

### 4.3 Overflowing but framed events

The openness of these *fair spaces* also proves decisive for paving the way for future engagements and the emergence of stabilising networks around the new as they tend to overflow. Nevertheless they also offer clear-cut framings for addressing specific actors and audiences: they set topics and are confined to specific times and places. The two festivals discussed in this paper differed in both, the way in which they framed their events and with regard to the resources they mobilised to produce such frames for encounters with the new and for the production of new information or evidence.

In the case of the *Transmediale*, the "Global Rainbow" challenged the rather intellectual focus of the cutting edge, experimental festival[4] as it evoked a familiar and universally intelligible image of peace and tolerance. The amazing laser beams on the night sky thus opened the festival to a wider audience going beyond the media art scene it usually addresses. The artist explicitly welcomed any "interpretative flexibility" her work might induce.

The event also burst the festival frame as it actively involved the show laser company. In their double role as sponsors and producers of the work, the team members got involved as facilitators and eventually acted as presenters of the event. Overflows were neither managed nor controlled. The laser experts offered their know-how and equipment, most importantly the six 100,000 Euro industrial lasers. But they also benefited from the project themselves. Firstly, the festival offered them the opportunity and space to produce the rainbow. Secondly, the laser team took a series of pictures of the event, presented the images and technical data online and discussed the making-of in great detail with their peers in laser expert internet blogs and online platforms. Photographs spurred and sustained the technical discourse around the project. Furthermore, the event has also spurred a demand for the reproduction of innovative arrangements in other places and for different occasions.[5] As neither the artist nor the curators prevented such overflows, the laser rainbow acquired a second, virtual life in commercial and expert interactions that are external to the festival context and the search for new artistic positions.

In contrast to this, "Hive" was a "singular event". According to the project coordinator it was too costly and labour intensive to be reproduced. Yet, overflows have also occurred here. Wherever the project was highlighted, the LED-technology was also mentioned in a way that went beyond the festival framing. Rather than addressing the innovative aspect of the students' installation, namely the digital interface, the press and media stressed the advantages of LEDs as an innovative light source with a great energy-saving potential. While environmental aspects were not an issue for "Hive", this LED-discourse offered a welcome and glamorous hinge for linking the *Luminale* to the commercial framing of the *Light + Building*. At the trade fair, the LED was the shooting star of 2010. That the performance also functioned as a commercial showcase and point of reference also became evident when the sponsors of the event took their clients to the pond in the park. Thus, the *fair space* of the festival allowed the media and the sponsors who accompanied or attended "Hive" from the fringes to invest in framings that supported their own interests, i.e. the production of news and the successful application and presentation of innovative products.

[4] In 2010, the *Transmediale*, under the heading "futurity now" explored the reality status of past "fictions, architectures and theories of the future" at the present day (Transmediale Office 2010).

[5] These reproductions took place in popular science framings like an innovation festival in France, celebrating the 50th anniversary of the laser invention or the 375th anniversary of a Dutch university. Yet, the first overflow already happened during the *Transmediale* when the installation stayed on for two more nights to support a donation campaign after the Haitian earth quake (Kulturprojekte Berlin GmbH 08/02/2010).

Another overflow is more consequential for the students as the project can offer them a valuable reference for their careers as media or lighting designers, i.e. in the form of CV entries and the appealing documentation of the project.

Furthermore, "Hive" created resources for future student generations. Not only has the *Luminale* become a fixed date for experimental "display of virtuosity" in the curriculum of the school,[6] the particular event in 2010 also laid the basis for further innovative activity thanks to the strategic framing of an external effect of the project. When it was clear that LEDs were the best suited technology to realise the project, the school filed a formal application for the subsequent investment in expensive training equipment. The usually impeding fact that the festival could not provide the funding was thus reframed to present the perfect occasion and justification for a large acquisition. In addition, the school can now draw on another resource, namely the knowhow and technical skills of "Hive"-participants. "If the students had to work them out every single time it would be a huge effort", said their professor. Meanwhile, the 1,600 LEDs have been reused in another spectacular project that received a lot of attention during the *Luminale* 2012.

## 5 Conclusion and outlook

In this paper I have argued that festivals offer *fair spaces* for the positive recognition and valorisation of innovation. Hereby, two interrelated aspects proved crucial: Firstly, the cases illustrate how positive encounters with the new were carefully crafted by "investments in form" (Thévenot 2007) before the event. The anticipation of the actual event, described as "beautiful" or "magical", guided both design processes and informed material choices including LEDs, mirrors, alu strips, cranes, ponds or landmarks in Frankfurt/Main and Berlin. All these considerations had an impact on the way in which the laser bundle or LED hive was encountered as new, meaningful and valuable by the heterogeneous actors on site. Open as they were, the socio-material settings offered what I have called *fair spaces* where neither access nor interpretation or valorisation could or should be fully controlled by the festival framings.

As suggested by Potts (2011), both festivals reduced their participants' "loss aversion" by offering structural and semantic frames such as program information, set stages and performance timetables, all of which facilitated the encounters with the new. Yet the costs were reduced for 'consumers' and 'producers' alike. Enhancing the collaboration of actors in the design phase and the recognition of that work during the events, the festival framing led to the production of *fair spaces* in which multiple interests could be satisfied and new resources were created on both the demand *and* the production side. For the production teams the benefit seems threefold: The set date of the performance reduced their risk of getting lost in an exhausting, possibly destructive "search" (Stark 2009). It also offered them a platform for immediate feedback. Finally, the festival framework also reduced their

[6] Of course, the polytechnic school also profits from the positive resonance and attention its projects receive from the *Luminale*, which is reinforced by the documentation of "Hive" and the fact that the project won a prize.

loss in the event of failure since in the face of simultaneous and abundant novelty, one single unhappy performance is easily overlooked or forgotten.

The constant possibility of failure draws attention to the impact of the socio-material setting and the impact of audiences for the recognition and valorisation of the new and, hence, their contribution to the innovation activity itself. In both cases the performances triggered overflows that enhanced the positive recognition of the innovative uses of technology in ways that went beyond the artistic or symbolic framings of the festival. In the case of the "Global Rainbow" this innovative use of the rather old laser technology spurred expert discourses in online blogs and led to a reproducible show format, ready for commercial exploitation in other events. In the case of "Hive", the school transformed the experience into an educational resource for further in-house research and development. The fact that overflows take different directions underlines my thesis that festivals present their participants' *fair*, non-exclusive and non-competitive opportunities to make their own best use of their experience.

This fairness has a price that concerns the commercial exploitation of festival innovation as well as its scientific exploration. Singular and site-specific as they are, festival events quickly fade away if they are not translated into longer-lasting formats. Yet, due to the openness of the events, it is very hard to trace and represent their consequences, e.g. their impact on innovation. Once the show is underway, curators seem to let go of their bundling authority and framing competence and leave the valorisation to others. As the events show, the shows were communicated and thoroughly documented by the project teams and their audiences while the official festival documentations only list them in line with all the other events, unable to represent their multiple impacts and traces. Festivals thus appear as frameworks that offer a temporary bundling service without managing its overflows. As a result, undesirable as well as positive externalities in the form of new ideas or innovative products or processes emerge fairly uncontrolled and are difficult to trace or quantify in absolute numbers.

I conclude that festivals encourage encounters with the new but do not provide the resources to translate them. This is not surprising since the purpose of festivals is neither the production of scientific facts nor the production of industrially reproducible artefacts as they emerge from the laboratories of research and development. Instead, they facilitate the *fair*, i.e. simulta-ne-ous and collaborative production and consumption, recognition and valorisation of emerging newness.

Thus, festivals offer socio-material settings or "truth spots" (Gieryn 2002, 2006) where new ideas, artefacts or arrangements are simultaneously demonstrated, tested and celebrated, producing the kind of situated evidence that is a key to innovation. Yet, as I have also shown, festival experiences are *transformed* in multiple ways and into know-how and rather "sticky" information (Von Hippel 1994). The work of *translation* as the glue of networks of innovation (Akrich, Callon et al. 2002a, b) is thus delegated to other agents, like individual spectators or commercial organisations, who draw their festival experiences and evidences together so that they live on even after the event by mobilising new resources and providing a reference for further engagements with the new.

This paper proposes a conceptual framework for capturing festivals' innovative potentials by looking at very particular cases, namely innovative uses of lighting technology in night-time events. How encounters with the new might vary across cases that are less culturally and aesthetically charged (Böhme 1997; Hirdina and Augsburger 2000; Hasse 2006) and how engagements might vary depending on the investments in the form they involve are questions for further social research on festivals and innovation.

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