

Social participation in designing everyday spaces enabled by networked media: a case study of DIY rainbow crossing

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Abstract: Digital technologies have facilitated the process of sharing design patterns and spatial interventions in everyday settings. Influenced by the emerging culture of spontaneous actions and real-time expressions in virtual space, people participate in construction and reconstruction of the physical environment in a continuous process at small-scale. This paper explores the relationship between social media and temporary design of places by everyday users and investigates how the culture of participation, enhanced by new media, is reflected in architecture, design and use of places. This study is significant as it argues that architects can take advantage of new practices in design associated with active participation of people as they represent new ways to orchestrate individual parts and make a coherent whole. To indicate the interaction of media and design, the paper studies the case of DIY Rainbow Crossing, a community action creating rainbow pedestrian crossings in chalk. This not only advances our understanding on the role of social media in scaling up and speeding up the transmission of design ideas from person to person, but also leads us to model individual actions brought together in a singular process through social networks.

Keywords: Collective design; social networks; community architecture.

1. Introduction

The aim of this paper is to gain an insight into the collective nature of space interventions; this is the process in which a design pattern is shaped as ideas and their physical manifestations are propagated through online social networks; and it is located at the intersection of virtual space, social interactions, and the physical environment.

Over the last decade, the flow of information through digital platforms of sharing ideas and experiences has influenced the process of shaping patterns and themes of design. In the new forms of online social networks, all involved individuals play an active role in not only consuming but producing resources flowing in the network. In such an interactive digital environment, mostly known as Web 2.0, the capacity to create and share information is in more hands. The term Web 2.0 or the second version

of the World Wide Web treats the web as a platform which allows users to create content rather than being limited to consuming information on websites (O'Reilly, 2005). Allowing people to customize, filter and assess information, digital tools are leading to new culture of participation (Rainie and Wellman, 2012). This has enabled users to participate in solving problems collaboratively and the diversity of perspectives has resulted in new insights and ideas and social creativity (Fischer, et al. 2006).

Having influenced the process of sharing information and feedback mechanisms, digital tools have opened new horizons to novel forms of civic engagement and community initiatives. The opportunities offered by Web 2.0 such as blogs and social networks have facilitated not only organising different forms of civic activism such as protests and petitions but also collecting citizens' remarks and suggestions (DeCindio and Peraboni, 2011). Applying the potential of new digital tools to engage people, transforms a single action to collective, and improves the process of design and planning to a collaborative and ongoing process.

Networked media is promoting not only online civic participation but also emerging themes of spatial interventions in public places. In parallel with the growth of employing digital media to facilitate engagement by city councils and local governments, there is a growing trend in spontaneous participation self-organized through online social networks associated with a physical activity and changing the place even though temporarily. In fact, the pervasive participation and the growth of collective behaviour of users in the virtual public domain are translating into collective actions and interventions in physical urban places. This might indicate the correlation between the pervasive use of online social networks and the growth of spatial interventions in new forms of informal, pop-up, do it yourself (DIY), guerrilla, and handmade urbanism (Crawford and Speaks, 2005; Haydn and Temel, 2006; Burdett, 2011; Bishop, 2012; Oswalt and Philipp, 2013, Rosa and Weiland, 2013; Beekmans and Boer, 2014; Lydon and Garcia, 2015). While there is a growing interest in addressing the role of connectivity in civic engagement, it should be noted that, for this study, social participation is used as a point of departure to explore the properties of a collective process of design which takes shape in online social platforms.

One of the important consequences of the interconnection of online social networks and spatial interventions is the ongoing flows of design ideas in a crowd of interacting individuals and the global spread of idea which leads to the replication of that idea. In fact, the transmission of a pattern takes place as an event repeats in different situations and places. In this process, the collective action of people makes a system similar to nature in morphological characteristic in which "there is endless variety; and yet at the same time there is endless sameness" (Alexander, 1979, pp. 145). In other words, the situation is different and unique because of the interaction of the difference of the contexts with the sameness of the patterns (Alexander, 1979). Given this, there is a need to move beyond the individual actions and consider the consequences of recurring ideas and how they make a system in the sense that Alexander (2011, pp. 59) proposes: "the word 'system' refers to a particular holistic view of a single thing". A system view is concerned with the holistic property as a production of interaction among parts (Johnson, 2002; Salingaros, 2004; Alexander, 2011; Batty, 2013; Capra and Luisi, 2014). While there has been little discussion about the impacts of network relationships on this process, this paper, through a discussion of DIY Rainbow, proposes a model of how social media generates a common language of spatial interventions.

To establish the relationship between online social networks and citizen-based spatial interventions from a system perspective, a conceptual framework is proposed in the following section. This aims to model the interaction of networked social media and design. It is then used to analyse the case of DIY

Rainbow as a collective behaviour in a design context which spread globally through social networks and its physical manifestation got replicated in different real-world settings.

2. Collective design process through social media: a conceptual framework

The interactive landscape of new media allows large groups of people who share a common interest in spatial interventions to come together and form a crowd using mobile applications such as Twitter and connecting through a certain hashtag. The actions of such a coordinated crowd generate a coherent whole or a system. In other words, new media, facilitating and promoting collective behaviour, generates a coherent system of urban interventions with a common language of design. To elaborate the earlier discussion of collective interventions facilitated by networked media, three stages are explained. The process of dissemination, replication, and evolution of design ideas will be supported by a discussion of the case of DIY Rainbow in the following section.

Simple interventions in physical environment have the potential to instigate a collective action as they spread through social networks and get replicated in different geographical locations. This emerging process has introduced the globalization of “local bottom-up culture, events and ideas spread virally across the world and become branded products” (Beekmans, 2013). This process of spread and replication has been facilitated by new media as a platform to exchange information, ideas, and experiences. In fact, it is not only media content such as text, image and video which goes viral online, but urban interventions occurring in different real-world settings spread globally. Hence, it can be studied as a meme which is a cultural replicator or a unit of cultural transmission (Dawkins, 2006). In social media, this process of dissemination takes place through the use of hashtags to annotate ideas and discussions as internet memes (Kotsakos et al. 2014).

Replication of ideas and recurrence of activities in different real-world settings generate a system that grows from the bottom up. Although the physical manifestation of an idea is concerned with a specific locality, as internet meme, it is part of a global community through digital platforms consolidating individual actions of people around a shared topic of interest, urban interventions in this case. Such crowd-powered systems include many interconnected individuals. Furthermore, engagement of a large population replicating an idea in different contexts expands the space of design possibilities dramatically. This specifically makes sense when we consider the huge storing capacity of social media as a digital environment enabling the growth of ideas and access to relevant information. This enlarges the design space which is “the possible configurations that might be considered as solutions to a design problem” (Woodbury, 1993, pp. 216). Moreover, exposure to a diverse set of users and information results in generating new ideas and creative insights (Perry-Smith and Shalley, 2003).

The ongoing flows of ideas in a crowd of interacting individuals and the replication of ideas lead to the gradual transformation and adaptation to the local and physical conditions. This process of learning and evolving shapes a pattern of spatial interventions. This is alongside the ideas of Alexander (1979) on pattern language. He draws our attention to the patterns of events which are “merely anchored in space” (Alexander, 1979, pp. 92) and can be transmitted. Recently, this transmission of a pattern such as an innovative use of urban places takes place through virtual communities. Although this process is not new, it has been accelerated through the widespread use of social media. By following a common pattern language, groups of people conceive the physical environment almost as if they had a single mind (Alexander, 1979). This promises emerging human-inspired processes that create living structures

capable of forming a coherent and harmonious whole as Alexander (2002) explains but in the new context of digital communication.

3. Research method

To support the conceptual framework discussed above, the first step is to identify examples of recursive urban interventions spreading through social media. This usually includes a small-scale and short-term physical change reflecting a DIY culture. Moreover, there should be the engagement of highly interconnected individuals interacting with and learning from each other. ‘Parklet’ as an innovative way of transforming parking spaces into green and public spaces (Davidson, 2013), ‘yarn bombing’, referring to wrapping trees and urban furniture with colourful yarn (Wallace, 2012), and DIY Rainbow all represent interesting case studies to understand how a simple urban intervention as a shared topic of interest on social media turns into an internet meme, spreads globally and gets implemented locally. While each case represents different degrees of participation and different functionality, they all refer to recursive urban interventions which have been not only promoted but also aggregated and coordinated by social media. However, the process of spread and replication of idea in the case of DIY Rainbow took place in a few days following the day on which the first DIY rainbow crossing was created. This allows us to study the intensified process entirely. In addition, in the case of DIY Rainbow, Facebook functioned as the main platform to promote the movement as the physical manifestations were instantaneously reflected on the Facebook page. This has made it easier to capture the process by studying one specific type of social media rather than exploring all social media platforms to collect the required data.

To investigate the collective quality of urban interventions, primarily the whole process of the socio-spatial movement of DIY Rainbow in response to the removal of a temporary rainbow crossing on Oxford Street in Sydney is discussed. To indicate the dissemination and replication of ideas on Facebook, the frequency of creating a DIY rainbow crossing is analysed. Moreover, the argument of formation of a pattern through replication is supported by exploring the variations of rainbow crossings generated by people in different places. Finally through a discussion, the whole process of DIY Rainbow is located in the conceptual framework of how a coherent system is self-organized through social networks. This provides us with a big picture of how a digital swarm concerned with one shared interest which is a physical change in this case forms a system of small-scale interventions and moves forward a bottom-up urban process.

4. DIY Rainbow

DIY Rainbow Crossing, a community action creating rainbow pedestrian crossings in chalk, represents an interesting case study to support the suggested model which explains how a pattern language of design is shaped through social media as it brings the individual actions of people together in a bottom-up process. To indicate the importance of social media in the emergence and spread of this community movement, it is worth mentioning that DIY Rainbow was one of the 10 stories of Facebook in 2014 to celebrate a decade of activity since it was launched in 2004 (Facebook ten stories, 2014).

This social movement in the form of a temporary intervention in physical settings emerged in response to the removal of the temporary installation of a rainbow crossing on Oxford Street, Sydney as part of the annual event of Mardi Gras 2013 (Cugnetto, 2013). The initial idea for the protest was encouraging people to create their own rainbow crossing using chalk and share it on a Facebook page named ‘DIY Rainbow’. After only three days, the number of rainbows chalked by people on different streets and shared on Facebook page reached nearly 200 (Figure 1). This unpredictable engagement of

people in a spatial intervention in public spaces is interestingly reflected in the statement of James Brehney who started the movement by creating the first DIY rainbow in a laneway in Surry Hills, Sydney:

“We started taking photos of our ad hoc crossing and the images quickly spread on Facebook. Our quiet night of what I like to call “whimsical activism” really resonated with heaps of people who were also disappointed with the rainbow crossing removal. As the night progressed, there was a lot of chatter from people saying they'd love to make their own rainbow. At this point I wasn't really convinced this would happen. It's one thing to get people to like a photo, it's another to get them outside making something” (Brehney, 2014).

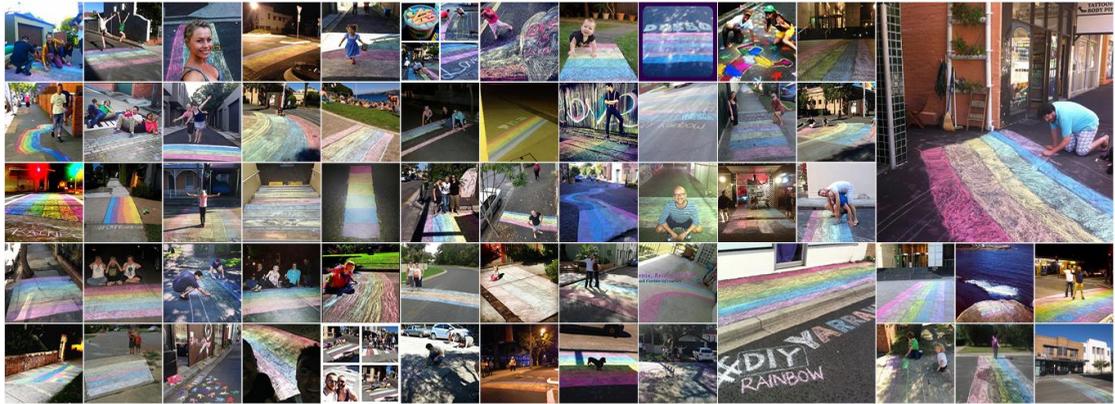


Figure 1: An integrated image of the city, 59 photos of distinct chalked rainbow shared on the 13th April (source: Facebook).

Pop-up chalk rainbows in the request for a permanent rainbow eventually led to not only a permanent rainbow installation in Summer Hill, Sydney but also the exemption of rainbow chalk crossings from new graffiti laws in May 2014 (Busby, 2014). This community action provides a good example of how an informal intervention might go viral on social networks, Facebook in this case, and result in changing a planning policy as illustrated in a timeline in Figure 2.

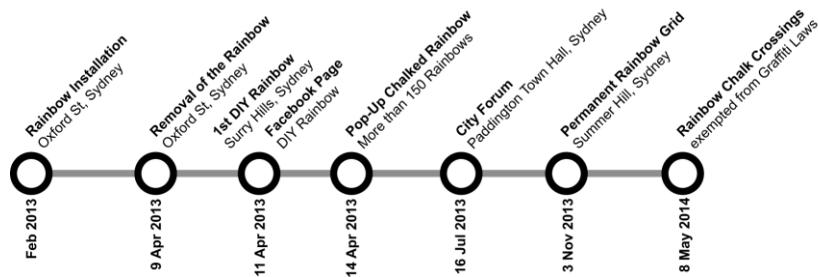


Figure 2: Timeline of Rainbow Crossing Movement.

A temporal frequency analysis of DIY Rainbow, shown in Figure 3, illustrates the birth, growth, peak, and decline of the movement. Data is obtained from Facebook Page to visualise the rhythm of creating rainbow and posting photos of chalked rainbow. The vertical axis shows the number of distinct rainbow crossings according to photos shared on Facebook almost on the same day of creation in the physical place. On 12th of April, the first day of creating the facebook page of DIY Rainbow and one day after the first chalked rainbow, there have been 15 rainbow crossings. The graph shows a sharp growth in the number of DIY Rainbows at the beginning of the movement which represents how it changed to an Internet meme and went viral. However, the rate of making a rainbow crossing and sharing declined gradually in a non-steady fashion with some random peaks. Despite the temporary nature of intervention, there has been no certain end for DIY Rainbow as people in different locations and different times still get inspired through social networks to make their own rainbow.

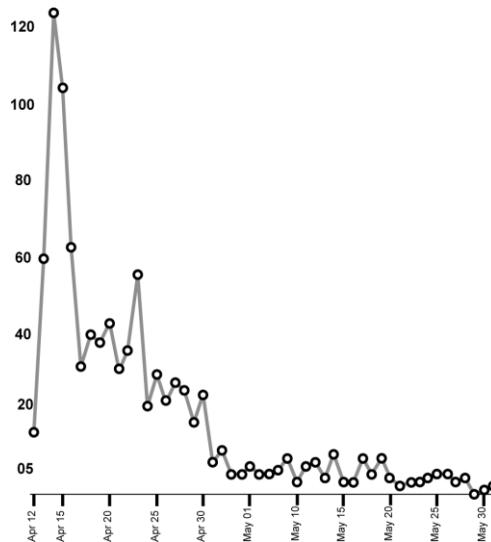


Figure 3: Temporal frequency analysis of DIY rainbows shared on the Facebook page.

While DIY Rainbow is significant in terms of understanding *temporary* nature of spatial interventions and the lasting impact of them, this paper specifically explores the *collective* nature of DIY Rainbow to address the interaction of media and design patterns. In fact, DIY Rainbow took place along with the growth of collective behavior of users in social media as we have been witnessing in recent years called as ‘media activism’ (Meikle, 2002) which has given rise to social movements such as ‘Occupy Wall Street’ and ‘Arab Spring’. However, in terms of a physical change in place, rainbow crossing movement represents an interesting example to investigate how people express their individualities while being part of a whole and make a system in the sense that discussed earlier, and what the contribution of social media is to fulfilling this process.

5. Discussion

DIY Rainbow exemplifies the emergence and growth of a community of numerous and diverse individuals in which online social networks are central in facilitating and promoting their interaction. In

the process of shaping a design system, as schematically illustrated in Figure 4, the first chalked rainbow crossing, as an initial idea of a physical intervention, was reflected in social media. It drove a change in the existing social networks, Facebook particularly, as the idea spread and captured the attention of people which led to the formation of sub-networks of people who shared that interest. Regardless of intention and motivation of people who participated in this movement, as the pattern of intervention, chalking rainbow in this case, spread in existing network, other physical changes took place inspired by the first action. This replication shaped a *pattern language* of temporary interventions under a certain name: DIY Rainbow. Tagging media content to the un-spaced phrase of 'DIYRainbow' united different actions of people around the world in media space and built a worldwide community supporting rainbow crossings.

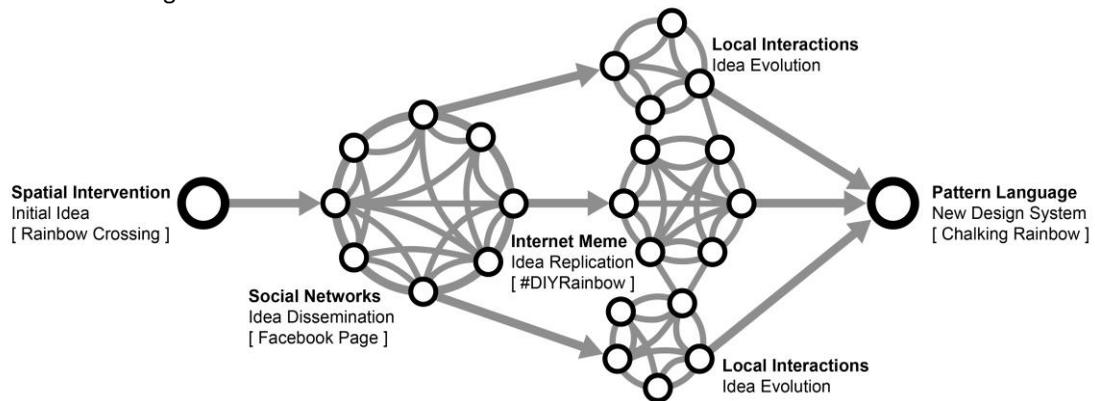


Figure 4: Modelling the process of a pattern formation through social networks.

DIY Rainbow supports the idea that only simple patterns have the capacity of transmission in large populations. “Nothing which is not simple and direct can survive the slow transmission from person to person.” (Alexander, 1979, pp. 230) This could be identified in different rainbows chalked by people following the simple rule of drawing by chalk. However, every single rainbow had its own characteristics and the diversity of rainbows chalked on streets, stairs, front door space and bridges demonstrates the adaptability of design pattern to different places which enhanced the image and identity of places in different ways. It is not the first idea which got replicated identically, but as people *localised* and *personalised* the intervention, it transformed. In addition to adaptation of idea to local conditions and contexts, the *interaction* of ideas through network structure led to the transformation of the first action. In fact, the interactive environment of social media platforms allows people to learn from each other through the exchange of information and ideas.

By this case, we attempted to highlight the impact of online social networks on the *process* of transforming a temporary intervention from local to global and from individual to collective in which a dynamic system of design with a media-oriented growth is generated. It should be noted here that the primary goal of this paper, rather than an in-depth analysis of social participation through new media was to develop a conceptual framework through a discussion of DIY Rainbow to model emerging social design processes. As DIY Rainbow was a special case, considering the social motivation of participants and the community involved, there is a need to identify and study other examples of recursive spatial interventions such as ‘parklet’ and ‘yarn bombing’ as mentioned before. Future research might examine

the applicability of the model discussed here and expand it to other contexts to understand bottom up urban processes in relation to social media. On the other hand, as this study only included data available through Facebook, future studies could extend it by including other qualitative and quantitative methods of collecting data on DIY Rainbow such as interview with participants, in addition to an exploration of other social media platforms such as Twitter. Finally, a content analysis of images, nearly 1000 distinct rainbow crossings shared on the Facebook page in two months, and comments associated with them is needed to explore and categorise them. This will contribute to understanding the evolution of a pattern propagating through social networks.

6. Conclusion

This paper developed a model to describe a collective process in which a pattern language of spatial interventions takes shape in the context of online social networks. Primarily, it has been argued that the widespread use of social media in which interactivity is embedded has promoted citizen participation. A mass participation of interconnected individuals through social networks leads to a collective process in which the recurrence of a spatial intervention in virtual communities and its physical manifestation across different geographical locations create a coherent whole that exhibits characteristics of systems. This has been supported by the case of DIY Rainbow to argue how media not only facilitates the spread of ideas but also aggregates them from multiple sources and creates an accessible design database. This forms a coherent pattern which can be transmitted globally through social networks.

Addressing new practices of design and intervention governed by large groups of people, this study attempted to argue the shift in defining the role of architects and planners rather than “the authors of a finished work ... as facilitators whose job is to help people act more intelligently, in a more design-minded way” (Thackara, 2005, pp. 214) and capitalising on patterns as “a powerful tool for controlling complex processes” (Salingeros, 2000) within a hybrid context of design including digital and physical layers of interactions. While this paper provided some insights into the relationship of social media and design patterns, future research is needed to gain a deeper understanding of the dynamics of social networks in creating a crowd-powered system of design ideas around spatial interventions.

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