What is "Socially Responsive Design and Innovation"?
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Abstract

This paper offers an account of socially responsive design in the form of design against crime and design for social innovation. First, we introduce the work and socially responsive design approach of the Design Against Crime Research Centre (DACRC) at the University of the Arts London, developed and delivered via collaborative action research projects addressing issues of bag theft, bike theft and ATM crime. We also reflect on the principles of this approach and its connection to open and social innovation. Secondly, we locate our approach in the context of the wider social design landscape, considering other socially-led design approaches and describe how the socially responsive approach differs from that of socially responsible design. Finally, we discuss what Binder et al. (2012) describe as 'design things'. We argue that design that is socially responsive can be understood as a 'design thing' that is both 'public forming and public serving' (Thorpe, 2014) and we also introduce 'design feeling' as a key contribution of design to the creation of the conditions for social change.

Design Against Crime as Socially Responsive Design

Socially responsive design is a field of design practice that 'takes as its primary driver social issues, its main consideration social impact and its main objective social change' (Gamman and Thorpe, 2006, 2011). It is a 'socially situated' (Suchman, 1987) practice that is contingent on context, in particular the agency of the people in and around it. It is this contingency that determines a design approach that is respons*ive* rather than respons*ible*.

As researchers and practitioners in socially responsive design our work with the Design Against Crime Research Centre (DACRC) at the University of the Arts, London, seeks to change things for the better for those victimised by crime. This includes those who suffer loss or injury by being subjected to criminal acts and those who perpetrate these acts, and in doing so damage not just the lives of others but

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also their own linked to prosecution and punishment. It also includes the citizens of wider society who share in the financial burden of publicly funding the 'cops courts and corrections', which in England and Wales in 1999/2000 was estimated to cost around sixty billion pounds and rising (Brand and Price, 2000).

Central to our designing against crime work is the understanding that those people who experience crime are well placed to help design against it, and are integral to our activities. We apply this understanding via a collaborative approach to design research and practice that connects communities of interest with communities of practitioners around issues of concern. We bring together individuals and organisations from multiple disciplines and diverse social actors, including criminals, police, victims, advocacy and interest groups, service providers, manufacturers, suppliers and local and national government, with designers, architects, planners, criminologists, ethnographers and engineers.   Where possible we ensure these multiple actors are involved in the identification of the challenges faced and the articulation of the design questions that arise in response to these challenges. Actors contribute diverse insights, knowledge and other resources in the co-definition and prioritisation of the specific challenges and contexts to be addressed and the co-development and/or review of design responses to these challenges to enable others to respond to similar challenges in their local contexts. This iterative, collaborative review of proposals and prototypes seeks to ensure that responses are effective and 'fit for purpose' for the contexts and publics they aim to serve. To illustrate this socially responsive approach and the outputs that it has co-created and co-produced to design against crime, we offer the following case studies.

Case Study 1: Karrysafe anti theft bags and accessories (2000)

The Karrysafe project (2000-02) explored the collaborative application of crime prevention theory to practice in the production of a collection of bags and accessories that responded to increases in street crime particularly 'theft person' and 'robbery'. The collection was launched in Summer 2002, publicised by the Design Council, who funded the project, and sold via Selfridges in London and online. The products and their marketing promoted awareness of the issues surrounding property theft and how to avoid it whilst helping users to avoid victimisation (see http://www.designagainstcrime.com/projects/karrysafe/). The bags also

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demonstrated the commercial viability and demand for such products to other designers and brands in the hope of promoting other designed responses that might further reduce the incidence and impact of property theft. Those interested in developing their own responses could (and can) do so, drawing on the openly shared design resource (www.inthebag.org.uk) that 'visually animates statistical and criminological data and combines it with contextual information directly relevant to design'. Of particular value to designers are the visualisations of 'theft perpetrator techniques' that clearly show how crimes are committed and the 'frameworks', such as the Conjunction of Criminal Opportunity (Ekblom, 2011), that helps practitioners understand the contextual factors influencing criminal events and think through ways of responding to them through design.

Case Study 2: CaMden anti theft bike stands (2006)

[Insert Fig 1: CaMden anti theft bike stand]

The CaMden anti theft bike stands are designed to encourage cyclists to lock both the wheels and the frame of their bike to the bike stand so as to reduce their vulnerability to theft. The bike stands are one of several design exemplars produced by the Bikeoff Project, a research initiative of the Design Against Crime Research Centre that explored how the design of cycling related products, environments, communications and services can reduce cycle theft and increase cycle use. Bikeoff's collaborative research began in 2004, with an Arts and Humanities Research Council (AHRC) funded study (Thorpe et al., 2004) that observed and recorded bicycle parking practices and provision to investigate the link between cycle parking and cycle theft. These findings were published and circulated widely amongst 'dutyholders' (those with a duty of care) by Transport for London (TfL) and the Home Office alerting those responsible for cycling provision and promotion to the significance of cycle security to cycle use and the potential for reducing cycle theft (and therefore promoting cycle use) through design. The knowledge from this study was applied and developed in collaboration with local and national partners (including TfL, London Cycle Campaign, London Borough of Camden, Metropolitan Police, Government Office for London, City of Brighton and Hove, Sussex Police, Cycle Touring Club of Great Britain, Broxap Ltd cycle parking equipment suppliers and

others). Collaborative working with cycling and crime prevention networks identified knowledge gaps and research questions that informed further collaborative research, including an AHRC/ EPSRC Design for the 21st Century project that aimed to 'kick start a design revolution to reduce cycle theft and increase cycle use'. This project saw the Bikeoff team collaborate with a constellation of local and national partners to co-develop and co-deliver research that informed cycle parking and security guidance and policy in the UK and Europe; created design resources that supported new product development through national competitions and challenge prizes and provided tools and methodologies for qualitative and quantitative design evaluation that were applied to the testing of product exemplars created by the project, such as the bike stands shown above. The outputs of this collaborative research were published and disseminated (Thorpe et al., 2010) and have been adopted, applied and developed in diverse contexts by actors ranging from design entrepreneurs to policy makers.

Case Study 3: ATM Art Mats (2010)

ATMs have been on our streets for over forty years and using one is a daily activity for most people in the UK. In 2013 a total of 2.9 billion pounds in cash withdrawals (LINK, 2013) were made at UK ATMs. Although most transactions are crime free, criminals target ATMs in an attempt to steal users' cash and cards. In 2013, UK losses due to ATM crime totaled 31.9 million pounds, an increase of 10 per cent on 2012 figures (Payments Council, 2014). Whilst the design focus for ATMs has been on developing user-friendly interfaces and original encryption software to ensure transactions are easy to make, can be verified and avoid abuse, the banking and technology sectors have not been idle in implementing new measures to secure ATM transactions against common ATM crime techniques. Many banks take a 'multi-channel' approach to ATM security with interventions in areas of technology, environment and behaviour (of ATM users).

One such intervention is the introduction of 'safety zones'; that is, yellow boxes printed on the footway to define a 'defensible space' that customers can point to when requesting privacy. Despite their contribution to security, there is little enthusiasm amongst banks, businesses or those who use and manage our streets

for this strategy. This is because yellow lines used are more commonly associated with instructing vehicles, rather than people, and many consider that their appearance detracts from the appeal of our high streets and signals insecurity.

This project responded to the challenge by creating ATM Art Mats - artworks that were installed on the footway in place of the yellow boxes. The artworks were popular with businesses, customers and other users of the streetscape and proved effective in granting more privacy to ATM users. Recent iterations of the project have involved local people in the creation of the ATM Art. This process uses the creation of artworks as a means to raise awareness for ATM security (and the right to privacy), whilst also affording greater local ownership of, and pride in, the public realm for 'ATM Artists' and their communities.

The three socially responsive design projects outlined above all produced designed objects that could be sold in the market place to reduce crime as well as design resources that were made freely available online to those who wished to have a go at resolving similar problems in their own way. They also created a community of diverse practitioners who got to know each other and have subsequently come together to address further issues of concern. To understand the nature and significance of the multiple and mutable contribution of socially responsive design the principles and processes that deliver this kind of design research and practice are now described in depth.

Designing for what we want more of – 'reframing' the anti-social

Design against crime has always considered, and responded to, the contested desires of users and abusers of products, systems and services as well as those who unwittingly misuse the outputs of design, or rather use them in ways that were unanticipated or unintended by the designer. In this way design against crime has sought to promote the enjoyment and effectiveness of legitimate use *as well as* to deny illegitimate abuse. The three projects described above illustrate socially responsive design research and practice as an approach to design against crime that reduces opportunities for anti-social behaviours *at the same time* as promoting opportunities for pro-social behaviours. This understanding of the need for design to

address 'what you want more of' (the pro-social) rather than solely 'what you want less of' (the anti-social) is evident in the work to reduce bag theft and promote enjoyment of the public realm as a place 'where strangers can meet' (Sennett, 2010), free from the fear of victimisation. It is also explicit in the work to promote cycling through the reduction of cycle theft and to reduce street crime through community arts projects.

As Batson (1998) observes the term pro-social 'was created by social scientists as an antonym for antisocial'. 'Pro-social' describes behavior that is positive, helpful and intended to promote social acceptance and social ties, linked to 'helping, sharing, donating, co-operating, and volunteering' (Brief & Motowidlo,1986). Evidence suggests that pro-social activities are central to the wellbeing of social groups across a range of scales (Helliwell & Putnam, 2004).

Despite the inclusion of social ecology and psychology within theories for Crime Prevention Through Environmental Design (CPTED), linked to strategies such as 'activity support' (the idea that 'designing in' social behaviours will reduce the opportunity and incidence of anti-social behaviours), the majority of design-led crime prevention *practice* has been oriented around 'target hardening' and reducing risk (probability of harm), rather than promoting opportunity (probability of benefit). The DACRC's pursuit of 'more positive', *as well as* 'less negative', outcomes from design extends the limited (and limiting) discourse of anti-social preventions and anti-social promotion to consider pro-social prevention and pro-social promotion. Table 1 illustrates how these two approaches coalesce and in doing so reframes design *against* the anti-social as design *for* the pro-social.

[Insert Table 1: Socially responsive intervention – reframing risk as opportunity]

The validity of this account is evidenced in the work of Robert Sampson (2012) who observes that highly socialised neighbourhoods, that is, those that benefit from strong community ties, such as higher levels of social connectivity between residents and the involvement of residents in public life and community collaboration, experience lower levels of violence, crime and anti-social behavior. Furthermore,

according to Sampson, strong 'social infrastructure' 'impacts positively on a surprisingly wide variety of outcomes, including child health, high-school graduation, teen births, adult mortality, social disorder and even IQ scores, creating what he refers to as an 'enduring neighbourhood effect' (Sampson, 2012).

This ability to 'reframe' anti-social problems as opportunities for pro-social intervention is important in the context of socially responsive design because of the 'wicked' (Rittel & Webber [1973], Buchanan [1992] and Buchanan and Margolin, [1995]) nature of many social challenges. 'Wicked' problems are complex, networked problems with no single origin or owner and multiple, sometimes contradictory, desirable outcomes for the people and agencies (actors) involved. To ensure the engagement of the multiplicity of actors necessary to impact upon these complex networked problems, the design process with which they are required to engage must acknowledge and address the multiple and diverse drivers that matter to them. Thus, the 'challenge' or 'problem' must be reframed as an 'opportunity' to address the multiple or common values of the actors involved. Dorst, the founder of the Designing Out Crime Research Centre at the University of Technology Sydney that emerged in 2007, has developed and articulated this account of 'reframing' in a clear methodological way (Dorst, 2015). He describes a series of steps supported by a set of design methods and tools. Dorst's methodology enables groups of actors to identify and articulate their values in order to find new perspectives from which to address previously intractable challenges. Examples include the reframing of problems associated with drunkenness and anti-social behavior linked to the night-time economy of the Kings Cross district of Sydney. Instead of persisting in ever harsher policing of these 'problems' in the existing frame of crime and disorder, the challenge is 'reframed' as one of designing a safe and secure 'festival'. The act of reframing anticipates the behaviors and values of the actors involved and accommodates them in pro-social ways, rather than regarding and responding to them through an anti-social/policing lens.

Design that is *responsive* not *responsible*, fraternal not paternal

The above account of socially responsive design articulates a shared agenda with other socially oriented design approaches including Manzini's (2015) design for

social innovation, which seeks to find new ways in which to address societal goals and challenges in socially beneficial ways; Cottam's (2006) 'transformation design', which seeks to change systems and organisations in order to better address societal concerns; and Whitely's (1993) 'socially useful design', which applies design to social needs and human wellbeing over and above stimulating human desires in order to drive market economies. The prioritisation of the social driver above others is also shared with the socially *responsible* design of Victor Papanek (1971), although Papanek's exclusion of market considerations is a point of difference between a design that is responsive to problems and opportunities and a design that considers itself to be responsible for them. In 1971, Papanek argued that 'design has become the most powerful tool with which man shapes his tools and environments (and, by extension, society and himself)' and that design must be 'independent of concerns for the gross national product if it is to genuinely serve rather than exploit society'. In the forty years since these ideas were expressed, despite increased awareness of social and environmental concerns, and the role of consumerism in adding to them, within the design profession as elsewhere, the 'market', and the consumerism that drives it, has accelerated permeating more aspects of society in the process. Whilst design for social innovation and sustainability seeks to facilitate new ways for society and humanity to thrive outside market-led paradigms - from skills exchange and time banking, to collaborative consumption and gift economies - many designers continue to face the day- to-day reality of addressing societal needs and seeking societal change whilst operating within the dominant market economy. Here, we see socially *responsive* design as a socially useful design approach that, whilst prioritising the social, embraces diverse practices and intensities of market oriented activity in its practice. It demonstrates a response to Morelli's (2007) call 'to review Papanek... from a new perspective, which reduces the distance between market-based and socially oriented initiatives'.

A further point of departure for the *responsive* from the *responsible* in design concerns the rejection of the paternal pre-eminence of design as *the* cause of societal problems and consequently and conversely, *the* means with which to address societal challenges and drive social change. Whilst design has doubtless played a key role in driving consumption, and conversely has a key role to play in delivering social change, it is evident that the discipline of design(ers) alone cannot deliver this transformation. As described above, the 'wicked' nature of societal

challenges necessitates the involvement of multiple stakeholders, often working in response to competing or contradictory drivers and producing desirable outcomes, in their reframing and solution. In such scenarios we recognise that design is not of sovereign status, and that it plays its part alongside other disciplinary skills and competencies, designers contributing alongside other actors. A designer may serve his/her own agenda or, as is customary within a discipline that serves the needs of others, a designer may identify and respond to the needs and requirements of other stakeholders. Here, the conflicted nature of wicked problems makes it unclear which of the stakeholders' perspectives a designer should be *responsible* to. Such scenarios require collaboration and compromises between stakeholders - a *fraternal* approach to designing that is *responsive* to the context in which a design activity is situated and the people with whom a designer is designing. This *fraternal* approach is preferred to a *paternal* approach in which a design is produced *for* a group of stakeholders to whom the designer considers him/herself *responsible*.

Open innovation for 'wicked' challenges

Simple problems (problems that are readily defined) are easy to solve, because defining a problem frequently leads towards a solution. The definition of a problem is subjective; it comes from a point of view. Thus, when defining problems, all actors (people and organisations who play a role in relation to the issue – exerting effect or experiencing affect) are equally knowledgeable (or unknowledgeable). Some problems cannot be solved, not least because actors cannot agree on the definition of the problem, nor, therefore, on what constitutes a desirable outcome. These problems are 'wicked'. Socially responsive design recognises the need to re-frame 'wicked' problems as design opportunities; opportunities that address and accommodate the diverse agendas of as many of the actors involved as possible so that they are willing to collaborate to address the problems that they effect or are affected by.

As open, complex and networked problems, wicked challenges require open, complex and networked responses. Clearly, the complexity of social challenges is too great to be considered from one perspective. Consequently, complexity must be distributed so as to enable a considered response in a given context. Accordingly,

'wicked' challenges favour responses that are open, collaborative, iterative and 'agile' (Beck et al., 2001). Openness and collaboration allow for a diversity of disciplinary approaches, skills, expertise and resources to be brought to bear on a challenge. Iteration and 'agility' respond to the mutable nature of these challenges.

This approach to finding new ways of responding to social challenges can be understood as a process of 'open innovation' (Chesbrough, 2003). This means that the knowledge (and assets) required to address complex challenges is unlikely to reside in one person or organisation. It is an approach that necessitates that knowledge exchange supports knowledge generation and innovation. It shares the risks and rewards of innovation and promotes the diversity of the actors involved and the contexts addressed (each actor recombining the shared knowledge in the way that is most appropriate to their given operational context). Open innovation approaches offer a good fit to 'wicked' challenges.

Reciprocal and cooperative approaches to problem solving are appropriate when addressing problems that lack clarity about their owners or origins. If a problem belongs to no single involved actor, it consequently belongs to all involved actors, all be it in different ways and to different degrees in different contexts.

Accordingly, the diversity of actor perspectives, evaluative criteria and desirable outcomes around a 'wicked' problem necessitates responses for which the outcomes are as diverse as the actors involved and their operational priorities and contexts. This accommodation of pluralism in response to shared concerns demonstrates a model that is 'agonistic'; one that simultaneously supports collaboration in response to a commonly held problem, whilst accommodating dissent and diversity with regard to specific actors' responses to 'their' perception of the problem.

Tams and Wadhawan (2012) note that, 'wicked' problems are 'further compounded by how each solution is part of a larger interdependent system, creating further unintended consequences and problems'. They warn that, 'in this sense wicked problems are unstoppable' and subject to 'repeated re-solution – not solution'. This mutability is well served by the open collaborative networks that are fostered by socially responsive design.

Designing as publics – assembling, forming and serving

The socially responsive design approach we describe here 'requires designers to work in a very different way' (Cottam et al., 2006), that is, 'to evolve from being the individual authors of objects or buildings, to being the facilitators of change among large groups of people' (Thackara, 2005). It acknowledges that 'at the heart of design is the need to mobilise cooperation and imagination'. It is a design process that is 'kept open to requirements that by necessity are evolving, as well as to be able to arrive at novel, and sometimes unexpected, solutions'. This requires that 'decisions about possible design trajectories are not made too quickly' and that 'the various stakeholders involved present their work in a form that is open to the possibility of change' (Binder et al., 2012). This conception of socially responsive design positions it as a form of design for open innovation. When it is applied to address social challenges it becomes a form of design for social innovation.

The diverse roles for design (from sense making to problem solving) in the context of social innovation are discussed in detail elsewhere (Manzini, 2015). The idea that socially responsive design makes a contribution to social innovation that starts with design actions which contribute to the formation of what Manzini calls 'designing networks' and 'designing coalitions', is relevant here. Manzini describes 'designing networks' as networks of 'mutually independent actors' whose different initiatives interact and thus influence each other and the result, 'even though they are working without a shared idea of what it [the result] could or should be'. 'Designing coalitions' are defined as 'tighter networks whose members collaborate to achieve shared results'. In our model of social innovation as open innovation we understand 'designing coalitions' as nested within 'designing networks', and that our actions as socially responsive designers are in some part linked to the assembly of 'publics' (Dewey, 1927), such that they may become 'designing networks', and agitation of these networks such that 'designing coalitions' might precipitate from them. In this way socially responsive design is both **'public forming'** (perhaps more accurately described as public assembling, given that it is the issue of concern itself that forms the public and the design action – or agitation – that assembles it) and **'public serving'** in that these actors, once assembled as a 'designing coalition', can deliver

collaborative 'problem solving' activities that, in their address to the 'public's problems', serve the public's needs (Thorpe, 2014).

Understanding the design process as a complex journey, the 'motivations and expectations' (Manzini, 2015) of which run from sense making to problem solving, allows a multitude of design actions, outputs and outcomes to emerge. At the beginning, the emphasis is towards sense making, that is, gathering, visualising and synthesising perspectives, knowledge and insights of involved actors. As the journey continues, participants corroborate understandings, similarities and differences linked to a process of definition and redefinition. The design briefs that emerge are then responded to by 'coalitions' of actors, including designers with the relevant skills, competencies and assets to prototype, test and iteratively develop designed responses to the briefs in the hope of providing 'solutions' to the 'problems' (re)defined.

The DACRC has iteratively developed a staged methodology that structures this approach. This methodology has been written about in detail elsewhere (Gamman and Pascoe [2004], Gamman and Thorpe [2006, 2009, 2011] Thorpe et al., [2010]) and is illustrated in Figure 2.

[Insert Fig 2: Socially Responsive Design Methodology (Design Against Crime Research Centre, 2009)

The designed outputs of this process constitute part of a solution to the problems they address. Since wicked challenges are mutable and cannot be solved, the products, services and environments created increase the *operational capacity* of involved actors, helping them *do better* in the face of the challenges they face. A bike stand, for example, helps cyclists lock their bikes more securely; a bag prevents pickpocketing; and an artwork creates a defensible space for an ATM user. Whilst the 'design coalitions' collaboratively design these outputs, the collection, collation and synthesis of the knowledge exchanged creates 'resources' that increase the *innovative capacity* of other actors within the wider network. These other actors may go on and seek to form coalitions of their own in order to find new ways to address similar problems in their local contexts. A further, less tangible, output of these

projects is the network of actors itself, the 'public', that is, which is assembled as a potential 'designing network' that is brought into being around the issue of concern.

What does a 'public assembling' activity look like and how might the assembled public be 'agitated' such that a 'designing coalition' might precipitate from it? In 2004-5, during the early stages of the Bikeoff project described above, a number of activities were delivered by the design team that contributed to the assembly of the 'public' from which the 'design coalition' that contributed to the outputs described above was formed. A research publication (Thorpe et al., 2004) was created and distributed to policy makers and cycling infrastructure providers, a weblog was created and contributions promoted by a sticker campaign targeting bike parking in London, a major public exhibition, *Reinventing the Bikeshed,* was curated as part of the London Architectural Biennale and in 2006 the Bikeoff team co-hosted the inaugural London Bicycle Film Festival. The festival celebrated cycling by showing films in which cycles, cycling and cycle culture were the stars and it brought the cycling public together. As part of the festival, and in collaboration with Transport for London's Cycling Centre of Excellence, a curated programme of films about bike theft, made by cyclists, were screened to police officers, cycling officers and cyclists. The screening served as a kind of community-created training for those concerned with bicycle theft and its prevention. These designed 'agitations' proved successful in assembling a 'public' for cycle theft within the cycling public and precipitating 'designing coalitions' that acted together, and independently, to address the problem from both combined and individual perspectives. These actions contributed to changes in policy[1], redrafting of guidance and standards[2], and the design and delivery of new, more secure bicycles, locks and cycle parking. Consequently, at a time when cycling was increasing, cycle theft went down[3], and the knowledge exchanged and generated with all the actors involved was later written up, contributing to police training materials (Johnson et al., 2008).

Socially Responsive Design – a 'thing' that makes us *sensitive*

Central to this approach, and this paper, is the understanding that the significance of design's role in response to societal challenges goes beyond the actions, 'motivations and expectations' (Manzini, 2015) that lie between 'sense making' and

'problem solving'. Design and designing is able to bring people together around a shared concern, assembling a 'public' (Dewey, 1927), a potential 'designing network' out of which, with the necessary catalyst, may precipitate a 'designing coalition' (Manzini, 2015) comprised of many people, with many interpretations of a problem. In co-designing, these people have to talk to each other; they have to deliberate; and they have to argue and understand each other's perspectives and the actions, principles and values that frame their concerns. They have to agree on goals and actions for reaching them in the process of 'reframing' (Dorst, 2015) the problem as an opportunity for positive change.

In this context socially responsive design describes both the process and the outputs of designing. Yet our outputs of designing are not limited to the material products, services and environments that might be delivered towards the 'problem solving' end of the design journey. Nor are they completed by the insights, visualisations and prototypes that are outputs of the 'sense-making' activities of design. We understand socially responsive design and designing as a *thing*, 'a socio-material *assembly* that deals with matters of concern' (Binder et al.*,* 2011). This design *thing* supports a multiplicity of actors in 'making sense' of their own and (each) other's actions, principles and values, and in so doing 'making *sensitive*' themselves and each other to their potential as assets in a collaborative response to the challenges and opportunities that emerge.

Aside from 'design thinking', defined by Cross (1982), Buchanan (1992), Brown & Katz (2009) and Lockwood (2010) among others, the contribution of socially responsive design relates to 'design feeling', which is linked to the designerly qualities of empathic recognition and understanding of (one) another fostered amongst a confederacy of actors engaged in the design action. In the context of socially responsive design, we are not *only* considerate of, and sensitised to, the feelings and potential of people as *users of* design, linked to the 'public serving' function of design, but as *participants in* design, linked to the 'public forming/assembling', socially responsive function of design.

By bringing people together around issues of concern and *sensitising* them to their own, and each other's potential as collaborators in new ways of addressing societal

goals and challenges, socially responsive design actions generate affects that contribute to the creation of the conditions for social innovations that deliver social change.

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[1] The Home Office made cycle theft a comparator crime which prioritised address to cycle theft amongst UK Police forces

[2] Secured by Design Schools Design Guide 2010. (2010), Building Research Establishment Secured By Design Sustainable Homes Standard (2009), Spanish Energy Saving and Diversification Institutes Cycle Parking Manual (2009), Scheme Safer Parking Scheme New Build Guidance (p.10) (2008), Home Office 'Eco Towns design guidance' (2008), Home Office bike theft prevention communication' (2008), Transport for London 'London Cycling Design Standards – A guide to the design of a better cycling environment' (2005).

[3] Rose Ades, formerly Head of TFL's Cycle Centre of Excellence, went on record and suggested that at a time when cycling was increasing Bikeoff made a contribution to reducing National Bike Crime statistics (Putting the Brakes on Bike Theft Seminar, Barbican, 2008)