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Anti-Solutionist Strategies: Seriously Silly Design Fiction

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ABSTRACT

Much of the academic and commercial work that seeks to innovate around technology has been dismissed as “solutionist” because it solves problems that don’t exist or ignores the complexity of personal, political and environmental issues. This paper traces the “solutionism” critique to its origins in city planning and highlights the original concern with imaging and representation in the design process. It is increasingly cheap and easy to create compelling and seductive images of concept designs, which sell solutions and presume problems. We consider a range of strategies, which explicitly reject the search for “solutions”. These include design fiction and critical design but also less well-known techniques, which aim for unuseless, questionable and silly designs. We present two examples of “magic machine” workshops where participants are encouraged to reject realistic premises for possible technological interventions and create absurd propositions from lo-fi materials. We argue that such practices may help researchers resist the impulse towards solutionism and suggest that attention to representation during the ideation process is a key strategy for this.

Author Keywords

Design fiction, well being, older people.

ACM Classification Keywords

H.5.m. Information interfaces and presentation

SOLUTIONISM AND REPRESENTATION

In *To Save Everything Click Here* Eugeny Morozov castigates the products of silicon valley and many academic research labs for providing solutions to problems that do not exist or prototyping reductive “silver bullet” solutions for complex social, political and environmental problems [31]. He takes the term “solutionism” from Michael Dobbins’s 2009 book “Urban Design and People” [16]. As HCI begins to address the development of “smart cities” it is increasingly important to engage with solutionism as it relates to urban and city planning. Dobbins argues that “solution-driven design” generally reaches for answers before questions have been asked fully:

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“The disconnect between problem and solution, always likely to be an issue, became exaggerated in the culture and practice of modernism in city design and planning, where problems were “dumbed down” to meet the solutions offered.” (p. 182)

He points out that the history of civic design is littered with failed solutions that presume problems rather than investigate them. Although the “big ideas” of consultants may be very seductive, it is likely that they will only solve part of a problem and may not apply across different contexts. For example, “festival markets” helped regenerate Baltimore’s inner harbor in the nineteen sixties and they were adopted as a strategy to regenerate other areas across the US. Despite working in Baltimore the markets failed in most other places (*ibid*).

Dobbins’ solutionist critique echoes concerns with technology-driven approaches long familiar in HCI but focuses in particular on the question of representation. He warns that the problem is “potentially disastrous” when very compelling images are used to present a concept:

“The big idea may be so seductive, may get so imageable so fast that people are swept up in the process,” (p.183)

The rise of solutionism in “Silicon Valley” and academic research has been supported by sophisticated future vision representations e.g. short films showcasing Google Glass or the Microsoft Home of the Future. But making things imageable is at the heart of what designers do, from sketching to prototyping. This paper argues that representation is crucial to how we imagine future technologies. It critiques current design representations as overly seductive and explores alternative strategies that reject the search for solutions. The work responds to visions of the smart city as they relate to older people.

SOLUTIONIST CITIES

Adam Greenfield traces twenty first century visions of “smart cities” to the High Modernism of the nineteenth century:

“The smart city replicates in tone, tenor, form and substance most if not all of the blunders we associate with the discredited high modernist urban planning techniques of the twentieth century” [21]

Songdo, South Korea’s “ubiquitous city”, for example segregates work to a central business area in towers along a

central boulevard far from residential areas as advocated by modernist architects like Le Corbusier.

Jane Jacobs' critique of twentieth century city planning traces many of its most tragic outcomes to two powerful aspirations for the future: the Garden City and the Radiant City [25]. The Garden City was the vision of a Victorian philanthropist Ebeneezer Howard, who imagined ideal worker accommodation in beautiful grounds and parks that hid from view the factories where residents would labor. Le Corbusier in turn drew on this idea to propose the Radiant City [25]. His idea of buildings that would be a "machines for living" was highly influential and many of the resulting tower blocks came to dominate city skylines until their demolition in the nineteen seventies (*ibid*). For Jacobs, the long corridors in Le Corbusier's tower blocks were vertical streets, they became the scenes of crime and vandalism because they were single use spaces without eyes upon them. Her warnings against segregated single use spaces are now so widely accepted that they are almost orthodoxy everywhere - except in visions of the smart city [19]. Companies like IBM regularly produce marketing materials that imagine ultra efficient smart cities where central control points can adapt traffic flow, dispense emergency services and deliver goods and services to our doorsteps or wherever we happen to be.

Why have modernist visions of top down centrally controlled cities been revived so enthusiastically in the digital age? Greenfield claims that smart city technologies "mesh particularly well with an authoritarian government's interest in monitoring dissenters" (*ibid*), but there is a broader technological philosophy at play. These ideas of the smart city are fundamentally solutionist, insisting public space be dictated by the needs of technological efficiency, opportunity and infrastructure.

Fantasies of the smart city present technology as a neutral tool that "disrupts" existing structures and innovates for the benefit of users and sometimes detriment of vested interests. Greenfield points out that there is very little technological innovation behind Uber, it is primarily a brand "with a resource-allocation algorithm" and "a rudimentary reputation mechanic running on top" [22]. The secret of Uber's success is not a radical technological breakthrough but rather regressive social reconfigurations, making use of loopholes in both legal frameworks and the social fabric of the city. And yet the rhetoric of the smart city can be just as seductive and compelling as Le Corbusier's visions of "machines for living"

REPRESENTATION: FROM SCENARIOS TO DESIGN FICTION

This extract from Le Corbusier's writing shows how compelling the original idea of the Radiant City was:

"Our fast car takes the special elevated motor track between the majestic skyscrapers: as we approach nearer, there is seen the repetition against the sky of the twenty four

skyscrapers, to our left and right on the outskirts of each particular area are the municipal and administrative buildings, and enclosing the space are the museums and university buildings. The whole city is a Park." [Le Corbusier, cited 25]

The phrase "machine for living" is a poetic one and Le Corbusier's power as a writer should not be underestimated. His vision of the radiant city takes the form of a narrative, a story, vividly told, beginning with speed and distant glimpses of vast towers. There is only one car on the motor track and this belongs to the narrator and reader, it is "our fast car". To the left and right are buildings, not other vehicles. This is perhaps the earliest appearance of the standard automobile advertising trope – the car on a gloriously empty road with no other traffic on it at all to impede its progress. The passage is rich in imagery and concludes with a powerful metaphor: the city is a park.

This kind of writing helped Le Corbusier get his ideas off the page and into the world. Greenfield warns that the narratives we construct about smart cities will be crucial to the ways in which they are discussed and developed:

"There are, after all, few more powerful ways of consolidating new ideas and integrating them into our lives than by weaving them into the stories we tell ourselves" [21]

In 2009 IBM produced a series of advertising posters promising they would "prevent crime before it happens" with "smarter public safety for a smarter planet" (*Ibid*). These representations have less in common with the scenarios and personas of early HCI than the fictions of movies like Minority Report, a film often cited as an example of the emerging practice of Design Fiction. Design Fiction has been suggested as a means of addressing the solutionist critique [e.g. 9, 10]. Morozov ends his book with examples of Adversarial Design like a parking meter which allows users to leave remaining time to the next user as a social nicety or reset it to zero to benefit the municipality [31]. This kind of design is suggested as a means of avoiding technological defeatism and encouraging more reflective uses of technology. Design Fiction has a long history in critical design and before that Italian Anti Design, both can be seen as explicit attempts to reject the search for solutions.

DESIGN FICTION AND CRITICAL DESIGN

In the nineteen sixties Harlan Ellison distinguished between wish fulfillment sci-fi and more plausible thought experiments with the term "speculative fiction" [18]. Design Fiction is a term coined by the science fiction writer Bruce Sterling in his 2005 book *Shaping Things* [38]. Here he remarked that he had been engaged in design fiction "for years" and distinguished it from science fiction as making more sense on the page (*ibid*). For Kirby [26] the props in movies like Minority Report are "diegetic prototypes" in that they were a part of a larger imagined world and

functioned as a part, rather than the point of a story, often presenting the imagined technology as desirable or benevolent. Julian Bleecker and colleagues at the Near Future Lab presents diegetic prototypes in the form of adverts and articles about products and services that do not exist yet, imagining not only the product but the kind of company that might make it and what a marketing pitch might look like. The notion of diegesis helps distinguish design fiction from practices like scenario and persona development in HCI. Scenarios have long been integral to any design process but they typically focus exclusively on the imagined device and users who are not characters but rather plot devices that illustrate product functionality.

Design Fiction often draws on traditions of critical design which originated in Italian Anti Design and Radical Design. Following the second world war Italian design became synonymous with chic and style in the home, in fashion and in automobiles [39]. But many designers became disillusioned with the intensifying consumerism their work supported and radical architectural groups began to produce challenging conceptual designs (*ibid*). Superzoom for example produced images of a “New New York” (figure 1) with a gigantic white grid laid over the top of its skyscrapers to create a new space [37]



Figure 1: New New York. Superstudio, Photo Credit: © CNAC/MNAM/Dist. RMN-Grand Palais / Art Resource, NY

This strange form echoes the notion of the superhighway and remains a disturbing vision of a literally “top down” architectural plan. Similarly the Archizoom Association’s “No Stop City” imagined a place where people “can live inside a shopping centre, where houses are already empty incubators”. The images of the “No Stop City” are repetitive grid like patterns in bleak, grainy black and white representing a “total commodification of products and life” [13]. Reflecting on the project many years later Branzi noted the influence on the group of “The Question of Dwellings” by Frederic Engels. Engels made it clear that there could be no “working class metropolis”, but only “a working class critique” of the existing metropolis (*ibid*). That meant that the problem was not “conceiving a better city but rather taking possession of the present day city” (*ibid*).

In HCI the production of conceptual designs, images and fictions, which question and challenge existing technologies, was developed by Tony Dunne and Fiona

Raby in a series of fascinating and ground breaking series of works they called critical design. The Compass Table, for example, consists of a tabletop filled with compasses that twitch whenever a mobile phone or other object affecting magnetic fields is placed upon it. Such critical designs defamiliarise technologies and trends that we might otherwise take for granted creating a space for reflection and critique. But they are also in themselves valuable commodities selling for thousands of pounds and like the critical art of the sixties, cannot escape the ultimate fate of becoming themselves desirable, comforting objects [11].

There has then been much criticism of critical design [e.g. 5,6,9,11,32,33]. Some speculative design has even been dismissed as classist and patronizing because it fails to address problems such as exploitation in the developing world [32, 33]. William Gibson pointed out that the future is here but unevenly distributed. Charlie Loyd created a twitter meme when he pointed out that most people miss the point about where this future takes place “the future happens to the poorest, most vulnerable people first.” In this sense dystopia is already here but it is not a problem for the privileged yet. For some, critical design can imply that dystopia is an option that the privileged can choose or not. But there is a wider problem with the black humour, parody and irony at work in critical design. The novelist David Foster Wallace saw irony as the dominant mode of cultural expression at the end of the twentieth century. The fact that the debunking irony of the sixties was still around thirty years later (now forty five years later) led him to believe that irony is, in the end, enfeebling.

“Postmodern irony and cynicism’s become an end in itself, a measure of hip sophistication and literary savvy. Few artists dare to try to talk about ways of working toward redeeming what’s wrong, because they’ll look sentimental and naive to all the weary ironists. Irony’s gone from liberating to enslaving. [41]

Critical, speculative and adversarial design is not always ironic. Neither is it necessarily negative and much of it is critical in the sense that it explores and illuminates difficult issues or aspects of life that we might otherwise take for granted. But ironic positions are often adopted to position such work [e.g. 17] and at this point it may be interesting to consider forms of design fiction that explicitly reject irony. The following sections describe techniques, which do not presume solutions or indeed critiques but instead create unuseless, questionable or flawed objects that can be used as starting points for conversations about alternative futures.

ANTI SOLUTIONIST STRATEGIES

Sketching and ideation is crucial to any design process. In the original warning against solutionism Dobbins states explicitly that he is not seeking to discourage ideation:

"It is vital to think of possibilities at all scales, to sketch or write them down to share in the process, but not to fall in love with them as "The Solution." [16]

There is a small but growing body of work in HCI, which explicitly rejects the notion of design solutions and suggests various unworkable concepts as a means to advance discussion and better describe the problem space. Such work does not seek to criticize but rather explore partial, problematic, flawed, and sometimes plain silly ideas.

Some of this work draws on the Japanese tradition of Chindogu, where amateur enthusiasts produce "un-useless" objects. The rules of Chindogu are quite strict: the objects must exist and they must also solve one problem while creating other, larger problems. For example, one Chindogu design proposes a portable streetlamp for lighting dark and dangerous streets. This solves the problem of the absence of light but creates the larger problem of having to drag a street lamp around with you. In this sense the design is not useless but neither is it useful: it is "un-useless". The practice was adopted in early HCI discussions around the design of domestic technology [8] and also used as a workshop tool for creative problem solving [34].

Similarly Vines et al proposed the use of "Questionable concepts" deliberately flawed partial solutions to complex problems, for example an exploding handbag to deter thieves and help alleviate older people's fear of crime. Such deliberately questionable concepts were introduced to older people in workshops to facilitate critique and discussion in participatory design sessions [39]. Light et al [28,29] developed performance techniques with older people to engage in critical discussions around the future of digital networks using performance props, workshops and exhibitions with older people to challenge and create alternatives to future of 'The Not Quite Yet'.

Andersen et al's "Magic Machines" workshops make use of the notion of technology as a "magical unknown" as the starting point for a range of workshop techniques that begin with material exploration. They form part of a larger body of work aimed at testing the link between investigative objects and the meaning that may reside as potential in and around them. This includes workshops focusing on body worn devices [3], imagining future scenarios for specific technologies [37] as well as creating magic machines with both adults and children [1, 2]. In these workshops participants are provided with materials (cardboard, wood, string, plastic, glue) to make lo-fi prototypes. Once the making is done they are asked to consider what the creations might be for. This stress on making allows participants to "think with their hands" and "make strange" the familiar (*ibid*) and allow them to build new objects based entirely on imagined technologies. The materials are increasingly ridiculous and the resulting objects do not really matter in themselves. Instead, for the temporary purpose of the investigation, they embody a fear or desire in

a form that allows us to try it out and rehearse living in a particular hypothetical future.

These types of workshop originate in a broad range of techniques from experimental theatre as exemplified by Boal [12], the art practice of estrangement as described by Shklovsky [36] and Dewey's notion of experience as a process of becoming [14]. They are directly related to sketching [24], paper prototyping [35] and the notion of "marking" from dance practise. For David Kirsh, "marking" is when a dance phrase takes on a simplified, schematic or abstracted form [27]. In a similar manner the non-functional prototypes "marks" the physical space of a future object. In that sense the purpose is to give temporary body to concerns and questions, to consider the potential reality of a world in which such a thing might exist, and to rehearse how to live in such a world [19].

SERIOUSLY SILLY WORKSHOPS

Two "magic machines" workshops took place in Newcastle where the city center is in the midst of developing new transport and technology infrastructure. The workshops were part of the *MyPlace* project which aims to develop and test a digital platform and toolkit that will enable members of the public to engage with local councils and other organizations more effectively in the research, planning and design of the urban environment.

We conducted the first workshop with members of our own inter-disciplinary research team and recorded the results through photographs and video presentations of the "magic machines". We ran the second workshop with members of the Newcastle Elders Council. This was audio recorded, transcribed, anonymised and accompanied by a selection of 30 photographs of the group making and presenting their artifacts. We performed a narrative analysis on the data including field notes, conversations during making and the final presentations on the magic machines potential use in the near future. Our approach to narrative analysis was drawn from Frank [20] who describes narrative as a 'fabrication mechanism' (p.130), in so far as stories are socially constructed from culturally shared resources, such as actions, symbols and tropes. This includes not only the words that are used, but also the images that are invoked as performative in their construction towards potential futures.

Workshop 1

We started by taking part in our own 'magic machine' workshop, where we individually responded to our imagined older selves. We built magic machines, took them out into the city and engaged people in conversation about what it was and who would use it. The researchers who took part were from a wider range of disciplinary backgrounds including; Computer Science, Sociology, Psychology, Architecture, Engineering, Design and Health Studies. The participants were instructed to write a description of their future selves and put it in their back

pocket. They then made a magic machine for whatever future self they had come up with. When the prototypes were done they were taken out into the city and “used”. When the participants returned they presented their design to a video camera while questioned by the facilitator on the details of the idea. The facilitator did this in a “dead pan” serious manner, insisting that the participant fully articulate the idea, however absurd it might be.



Figure 2: The Poo Detector

Figure 2 shows a “poo detector” imagined for a lonely and grumpy old man interested in bringing to justice pet owners who did not clean up after their animals. The following is a transcript of the presentation of the device to the group:

Mark: “So this is a poo detector.

[laughter]

Mark: And, erm, it’s for angry, bitter individuals in cities. And I go along and I find some poo and I recognise whether it’s a dog or a cat. And then I take a DNA sample. And the device tells me where that poo comes from. There’s a database of dog poo, er, of dog owners and, and cat owners. And then it’ll direct me to their house where I can take the poo and put it on their doorstep.

[laughter]

Mark: And there’s an army of embittered individuals who are doing this. I think this would sell like hot cakes.

Kristina: Absolutely it will.

[laughter]

Kristina: In a dystopic future. Because this is a crime-vigilante system. This is you taking the law in your own hands.

Mark: This is, but this is, this is a real thing as well though. Because like, erm, where I live there’s this thing called Streetlife. It’s like a mini Facebook and the idea is, “Let’s have a really local Facebook,” and people are talking about dog poo like most of the time.

[laughter]

Mark: And it’s kind of like – and people will leave, like, erm –

Kristina: Messages.

Mark: Messages up on streetlamps and stuff saying, you know, “We’re watching you. We’ll call the police.”

[laughter]

Kristina: And, and, and this kind of thing. You know, this is a much more elegant solution, I think,

The “device” was taken into the city and tested in a park where the presenter attempted to find some excrement, (figure 2).

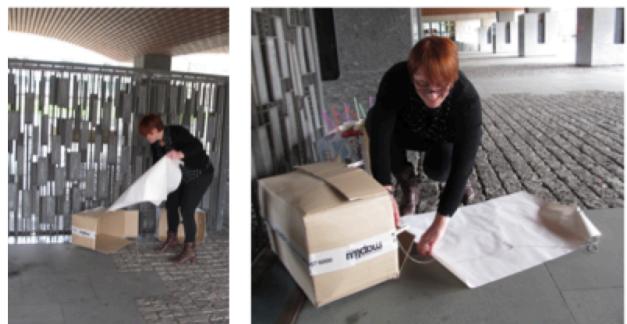


Figure 3: the Listenator

Figure 3 shows the Listenator a device for collecting conversations that take place within the council.

Rachel: Erm, so this is – it takes a bit of a while to set up and, and it, it’s actually – I’m going to call this the, the listenator. And because it’s main purpose is to listen out for juicy bits of information. Just in case you might need it. So, erm, initially we thought it would be best placed, you know, just kind of listening to neighbourhood conversation, you know, kind of out in the street, next door. But then actually, erm, in going out into the world, we realised that it might be quite useful to listen in to what the council were up to. And actually use that, erm, for whatever means or maybe not use it. Just store it. Just cos we can have it. Erm, so we actually tried it out with the council, or at the council offices earlier on. Erm, and, they, they were very interested in the prototype.

[Laughter]

Rachel: One of our partners recognised us.

[Laughter]

Rachel: They might not be a partner anymore.

[Laughter]

Kristina: I do apologise for that.

We took the Listenator to the Council offices and photographed it there. Co-incidentally a senior planning manager associated with the MyPlace research project passed by and asked us what on earth we were doing. There

was laughter during the encounter but there was also perhaps an element of discomfort on both sides. Is this how tax payers money was being spent? Where were the solutions?

The “magic machines” looked like something children might have made at playschool and it was impossible for anyone to take them seriously, and yet the questions during the presentation required us to take them seriously. Silliness, in this sense, can be thought of as an anti solutionist strategy. The researchers felt uncomfortable and absurd and this is precisely why it was a useful exercise. The strategy resisted solutions and the making of magic machines was in this sense an antidote for solutionist tendencies that are bound to be strong on a city-planning project. We decided to repeat the workshop with older people.

Workshop 2

This second workshop took place over a day with 6 members of the Elders’ Council, a local community organization supporting older people to take part in local decision-making initiatives. It followed on from previous meetings and events we had organized with them. We began in the morning with reflections on their current experiences of city planning. In the afternoon we introduced the table of materials and explained they would need to present “magic machines” back to the team.

Re-appropriating existing technology

There was, understandably, some resistance and confusion when they were instructed to make “magic machines” out of the cardboard, pipe cleaners and glue that had been provided. Some immediately started picking up materials, attaching pieces together and sometimes wearing them on their heads, faces or arms. After several minutes of exploration, those who were more reticent began looking at the materials and talking to each other more generally about their ideas.

Jill and Arthur, for example, began to work together on ideas that started from existing technology that they were familiar with and had recently read about or seen on the news. They imagined a collection of interconnected technologies for the city; *The Hackers Hat*, *Advanced Google Live Feed* and *The People’s Printer* (figure 4). These ideas all centred around an inner city carnival that would collect data about older people’s use of the city in a celebratory and raucous way. *The Hacker’s Hat* pushes notifications to people’s mobile devices in Newcastle to communicate the latest news on the ‘carnival’. The hats are hackable by those who have basic knowledge of technology. These can be purchased for a reasonable price for members, Hacker Hat selling has become a social enterprise and the money raised contributes to further expansion of the carnival scheme. *Advanced Google Live Feed* is an enhanced version of Google glasses that analyses data and feeds this back to local councilors to

show them exactly how the city is used in real time. The People’s Printer uses data from the Google live feed to automatically generate alternative visions for the city. It prints these ideas out in miniature so people can collectively bring them together and discuss potential plans for change. The printer is not officially owned by anyone and moves around on wheels to communities as and when it is needed.



Figure 4 . The Hacker’s Hat and People’s Printer presented by Jill and Arthur.

Jill appropriated existing systems that she and Arthur were familiar with in order to do something positive or good:

Jill: ‘We felt anything we do, particularly in this vision, should be able to be viewed by the planners, if you like, while we’re doing it. Rather than afterwards, having to go to a physical place and feedback. If the military can do it now – they sit back and watch people being shot and killed – well why can’t we look at these devices in a positive way in the future, so they’re used for good’

All of the ideas presented by the group were extensions and modifications of existing technologies repurposed for citizens and elders in particular, but considered more generally for the benefit of people in the city. These adaptations of existing technology echo the notion from Engels and Branzi that the true task in imagining the city of the future is in taking possession of the existing one, not inventing something new.

Social Commentary, Personal Values and Concerns

Many of the ideas evolved in response to current societal challenges such as the reduction of council services and potential privatization. Rather than trying to develop ideas that encouraged city officials to make change for them, the participants discussed how they could take more control of the delivery of services, having their own ‘one stop shop’ and their ‘own mechanisms for getting things done’. They

imagined dystopias with chronic problems around waste management, lawlessness and a general lack of support for ageing populations. But these dystopian visions were turned into opportunities for innovation and change. These came in the form of carnivals, sustainable businesses and community sharing schemes.

Val came up with the '**Technology Resistant Nonagenarian Scooter Movement'**. (Figure 5) This included purpose built scooter lanes and charging points around the city. The scooters would be designed for resistance and fighting social movements. There would be holders for a map, umbrella and placards, also a wool dispenser to mark out particularly good and bad scooter routes in the city. The nonagenarians would mark out the most inaccessible buildings, the most comfortable seats and the best public toilets.

The scooter was therefore not only a useful mobile device for getting about, but also a way to continue work raising awareness of accessible routes, toilets and seats for older people in the city. In her presentation Val played out the role of speaking to officials, initially describing what her ideas were and presenting these as a reality, using props and drawings to illustrate her points.

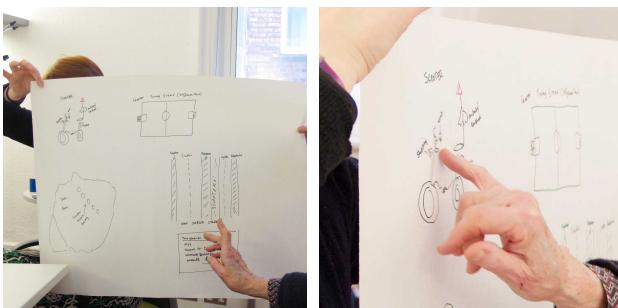


Figure 5. Technology Resistant Nonagenarian Scooter Movement as presented by Val.

The scooters were also described as a way of anticipating potential changes in mobility for her and others who would be of a similar age.

Val: *'I'm on behalf of the technology resistant, die-hard nonagenarians. Looking at the increase in Elders' Council membership [...], we have to take into account the ageing population and we mustn't forget the very old part of the ageing population.'*

She became the advocate for a group of, at present non-existent nonagenarians to '*speak on behalf of that age group*', underlining the need for greater recognition within city planning, as that group become more prominent.

Making and Maintaining Imaginary Worlds

Reflecting on the experience of the workshop Arthur said he found it stimulating. *'I was a bit apprehensive to begin with, but once we got going, yes the ideas flowed from somewhere and just got bigger and bigger'*. Jim too described how the workshop was '*a new concept for me*'.

and his sense of a '*lack of imagination, an innate lack of imagination, [...] means that I grew up to be absolutely rubbish at making things.*' This meant he also sometimes felt self-conscious, preferring to listen, chat and help others with their ideas. Jill said '*It was fun, I enjoyed it*'. Danny laughed a lot while making his artefact, but remarked that he '*stopped doing this when I was four years old*', and asked '*Are you sure you're not going to pass these onto the clinical psychology department because they'll think we're all mad*'.

Despite these anxieties, Arthur invested in his and Jill's ideas during the presentation and performed the role of a proud inventor unveiling a number of different technologies. Val also took the presentation very seriously, pronouncing her words very carefully, standing proudly and authoritatively with her box route markers and illustrations of a revised city plan.

The presentations made the objects into theatrical props and allowed the gathered insights and concerns to be anchored in the moment. It was possible to speak confidently as to how the device would operate, because it was already right there. At the same time the objects were all essentially silly and nonsensical. At the end of the workshop it was very clear that the hastily made objects would do none of the things that the makers proposed and as such they functioned as sketches, or marks, that could be reinterpreted and evolve.

This process makes use of mechanics similar to pretend play: the ability to represent one object as two things at once [28]. Far from suggesting solutions for intractable problems these magic machines stress the absurdity of purely technological responses to complex political and social issues.

FRAGILE NAÏVE FICTIONS

The philosopher and sociologist of technology Bruno Latour has long argued that critics must move beyond critique. For Latour the critic must not merely debunk but also assemble:

"The critic is not the one who lifts the rugs from under the feet of the naïve believers, but the one who offers the participants arenas in which to gather. [...] if something is constructed, then it means it is fragile and thus in great need of care and caution." [30]

Karen Barad argues that critique is often "a destructive practice meant to dismiss, to turn aside, to put someone or something down— another scholar, another feminist, a discipline, an approach, et cetera." Against this negative practice she recommends Alan Turing's notion of the critical "*where going critical refers to the notion of critical mass—[...] a branching chain reaction that explodes with ideas.*" [4]. Within the Humanities there is of course a very long and rich tradition of criticism which is not negative at all but rather seeks to illuminate and open up works of art or literature for further discussion and appreciation. Both

workshop facilitators worked hard to clear a space for the creation of fragile ideas in need of care and caution. The facilitators commentary and questions sought not to critique but to further illuminate and appreciate the idea. The ideas in both workshops were fantastical and silly rather than concrete solutions, yet they were also responses to specific issues and concerns. The representatives from the Elders' Council, produced proposals that they felt were silly, but also made sense in the context of their experiences of a lack of representation in city planning issues. The process enabled multiple ways for people to come at the problem, re-defining, multiplying and complicating it from their own and each other's perspectives.

Re-articulating problems through play and exploration, allows ideas and designs to be fragile. As we saw with particular members of the Elders' Council, some felt self-conscious about their ideas and lacked confidence in their making. Others took a while to warm up, working with people in the group before adopting more confident roles to present their designs and ideas. Others took the process seriously from the start and invested themselves in creating fantasy worlds and infrastructures to support their designs. The fantasies, however, were all very much grounded in a shared reality. In this sense the workshop process speaks to current interests in design to support expressions of 'matters of concern' [15] within publics. Rather than attempt to design towards a pre-defined problem space, the workshops encouraged a collective re-imagining of a future world. This differs from participatory design techniques that use collective making as a practical a way of gaining clarity on potential solutions to problems.

To emphasize the difference between these and other kinds of design fiction we look at the "Eyes and Ears" (figure 6) system presented by Danny at our workshop.



Figure 6. Eyes and Ears,

Eyes and ears is an augmented system to help planners hear and see more effectively. On the left are two characters that Danny created with the research team: a member of the public and a planning officer. The member of the public looks confused and the officer looks pleased with himself for continuing to confuse the public.

Danny: 'Well hopefully the glasses will help them to see the planning department and the ears will help them to hear. Well that's the intention, but I was going to say they'll find something to counteract it, so what's the point? They're blind and deaf, the council, especially the planning department.'

While Danny's engagement with the making was initially full of fun and hope, in his presentation he raised a critical issue: the technology would not necessarily solve the problem of any future planner's ability to see and hear concerns expressed by the public. Danny illustrated the idea by strapping paper cups to his head. The photograph emphasizes the absurdity of the proposal, this is clearly a moment of playful silliness. However it would be possible to take the same idea and render it as either a seductive utopian dream in the form of an advertisement or a dark warning in the manner of critical design like figure 7.

The image below features a corporate logo, the older person wears glowing glasses and the green text box holds the data rain from The Matrix movie. The advertising copy inverts the old saying about not being able to teach an old dog new tricks.



Figure 7: Eyes and Ears 2 Photo credit: Andrea Cazzavacca, Flickr

The image is sinister and the dystopian movies it references clearly indicate concerns about surveillance. The copy "let us walk a mile in your shoes" is a parody of patronizing city planning and the overall message is: be as suspicious of this idea as we are. The corporate logo raises questions about what data will be gathered and how it will be used.

There is a stark contrast between this image and the prototypes generated in our workshops. It is clear from the very form of the cardboard machines that the ideas are playful, half formed and exploratory. They are in Latour's sense, fragile or naïve and suggest care and caution if they are to be considered at all. The idea as expressed in the critical design is forestalled and dismissed before it begins. The message is that we, its makers, are distanced from its proposed narrative. The fragile and naïve fictions however, attempt to clear a space for the expression not only of

anxiety around the fact that the needs of older people are rarely if ever considered by younger city planners but also the (fragile) hope that this can be changed.

DISCUSSION: SERIOUSLY SILLY

Architects deliberately use sketches early on to indicate provisionality not finality, so it is important to ask how designers can strike a balance between making something concrete enough that it is visible and making something so slick that it is beyond criticism or is itself already a criticism. Magic machines allow for the expression of anxieties, problems and concerns but also tentative approaches to intervention. These interventions, however ridiculous enable further discussion and may suggest other ideas. They can also help to identify and curtail solutionist tendencies. Many of the magic machines were humorous but they were not ironic.

David Foster Wallace argued that irony is now the dominant cultural form and consequently, itself oppressive:

"I think, today's irony ends up saying: "How very banal to ask what I mean." Anyone with the heretical gall to ask an ironist what he actually stands for ends up looking like a hysterical or a prig. And herein lies the oppressiveness of institutionalized irony, the too-successful rebel: the ability to interdict the question without attending to its content is tyranny" [41]

For many cultural commentators satire does not challenge preconceptions or assumptions, it merely provides a safety valve for people that already agree with each other. Much work in critical design draws on the Situationists who believed that we have become stupefied by the society of the spectacle. The function of critical art, and later critical design, was to rouse the audience from their complacent dreams. Ironic critical design then takes a position of knowledge and power. The enlightened artist or designer shows something to the audience that they cannot otherwise see. This is clearly not the case when Danny straps plastic cups to his head or when a researcher demonstrates a cardboard poo detector. The facilitator of a magic machines workshop must take any idea, however ludicrous, absolutely seriously. A poo detector you say? How does it work? Who uses it? What is it for? This serious questioning of absurd ideas helps articulate and develop whatever idea is being discussed but also validates its absurdity. This reversal is crucial and draws on long traditions of absurdist practice in the arts.

There is a long tradition of absurdism and it might be usefully contrasted with solutionism. In contrast to Le Corbusier's narrative of the car dependent radiant city, consider this short story by Kurt Vonnegut about a dying planet called Lingo 3 and a life form that resembled the American Automobile:

"They had wheels. They were powered by internal combustion engines. They ate fossil fuels. They weren't

manufactured, though. They reproduced. They laid eggs containing baby automobiles, and the babies matured in pools of oil drained from adult crankcases. Lingo Three was visited by space travelers, who learned that the creatures were becoming extinct for this reason: they had destroyed their planet's resources, including its atmosphere." [40]

This is science fiction but it does not, to use Sterling's phrase, make much sense on the page. The sentences are simple, short and declarative. It is not a speculative fiction and suggests no design solution. Such absurdism can function as a critique of high modernist writing like Le Corbusier's where cities are turned over to automobiles using up roads and tyres to fuel the economy. But the critique is made both in the story content (the car dystopia) and the form (simplicity, absurdism, surrealism). The form does not allow distance or power to the one making the critique: this is clearly an absurd story, there is no alternative idea or solution here. Such absurdism expresses a predicament but it offers no solutions. So too the "magic machines" convey anxieties, fears, hopes and desires but they resolutely resist solutions: the medium is the message.



Figure 8: Photo credit: courtesy of International Business Machines Corporation, © (2013) International Business Machines Corporation.

"The medium is the message", Marshall McLuhan's most famous phrase, might have seemed enigmatic in the nineteen sixties, but it is increasingly a very ordinary description of the world we live in. The 2013 billboard campaign for IBM's "smarter cities" (figure 8) literally extends the medium of the billboard to make a seat and shelter. The implication being that IBM will use such innovative, clever design-thinking to make simple but smart innovations in the cities of the future.

As with much critical design the message here is in the medium. The workshops described here reject such formulations through the materials and mediums employed. The Photoshopped "old dogs" image was easier and quicker to produce than Danny's plastic cups but the medium carries a weight and an authority that the "magic machines" resist. For this reason it is important to think carefully not only about our plans for cities of the future, but also how we represent them.

We are not arguing that these anti-solutionist strategies inoculate the researcher against solutionism. They are not a

first stage of problem exploration that will inform the later and more serious solution development state of a process. We claim that they are of value in and of themselves in that they explicitly reject the notion that complex social, political and geographical phenomena like ageing populations are technological problems to be solved. The discussions between Jill and Arthur about repurposing existing technology indicates that what is required is not necessarily a device but new contexts and possibilities of use. When Val imagines a scooter based nonagenarian group of protesters the starting point is that social problems will not be solved by technology alone and must be considered as part of a wider struggle. Danny's idea of a system that allows counselors to see through the eyes of older people was expressed at precisely the same moment as the reservation that it would probably be ignored. These then are not preparatory sketches for future solutions but rather nuanced discussions of the limits and possibilities of technological intervention.

It must also be stressed that we are not proposing these strategies as the answer or an alternative to solutionism. Solutionism does not appear from a void. Funding for research is increasingly geared towards "impact" on the economy or society. Similarly conference venues like CHI are geared towards evaluating research in terms of new technologies or approaches. Both the funding and evaluation mechanisms for research presume that we understand the problems we confront and that technological solutions are just around the corner, waiting to be discovered. The solution to solutionism would be social and political: It would reconstitute funding mechanisms rather than suggest design strategies.

However, we find value in these approaches to the extent that they facilitate a different kind of orientation to our technological futures. The Danish poet Kirsten Hamman writes: "Most of what I say is meaningless. I say it to fool the devil of silence" [23]. By conducting conversations and work inside these temporary trashy misunderstandings, we can listen and express ourselves outside of the forces of tiresome internal monologues, half-baked solutions and the devil of silence.

CONCLUSION

This paper has identified a number of practices, which reject the search for solutions and deliberately seek to create useless, partial or silly objects. It has argued that although critical design and design fiction offer alternative aims for design (critique, commentary) the practice must move beyond satire and irony. Findings from two "magic machines" workshop were used to illustrate the ways in which we may resist the urge to present slick solutions or criticisms, and instead acknowledge the complexity of the problems we seek to address and the fragility of our own ideas and approaches. We have argued that these strategies can help articulate and explore problem spaces as well as make room for naïve, fragile fictions.

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