How the Inclusive Design Process Enables Social Inclusion

Yanki Lee* and Julia Cassim**

Royal College of Art, Helen Hamlyn Centre
London, UK
* yan-ki.lee@rca.ac.uk
** julia.cassim@rca.ac.uk

Abstract: Inclusive Design responds to Design Exclusion and aims to create designs that are mainstream in nature, which can benefit the majority by including those who are design excluded. The many Inclusive Design initiatives since the 1990's in the UK, have demonstrated that working with people who are excluded by design such as older and disabled people is an effective way of developing inclusively designed products, services, environments and communications for other groups in the population. How do these user involvements actually work and what elements of the process have an impact on both design practices and users - or - user engagement methods? This discussion reflects on the premise that the Inclusive Design process can enable social inclusion and looks especially at the importance of the understanding of cultural context to ensure effective user/designer partnerships. It is based on the experience of the 48 Hour Inclusive Design Challenge that took place in Hong Kong in the summer of 2008 and involved designers from Hong Kong, Mainland China and East and Southeast Asia. Besides identifying different design practices and their relationship with social development, the focus of this paper is the introduction of a NEW 'Exclusion-Inclusion Framework' for design that builds upon Lee's previous work on the taxonomy of Design Participation and critique of the classification system of the Medical-Social model. This new framework contains four layers: exclusion, segregation, integration and inclusion and four *creative tactics* to explain the preparatory process for the 48 Hour Inclusive Design Challenge in Hong Kong. Their aim was to inspire 'users' who are 'design excluded' to understand the importance of design as a subject and enable them to become effective 'design partners' who can work with designers and thereby be participants in the design process. A case study for each category will be shown and discussed. The paper concludes with reflections and the proposal of the Exclusion-Inclusion Framework for future development and application.

Key words: Design, User engagement, Design Exclusion and Social Inclusion

1. The design of the world

Some designers and design researchers will reject or have reservations about the full concept of user participation in design, viewing the role of people as the subjects or objects of their investigations and no more.

However, more and more younger members of the design community with different methodologies and methods are likely to ponder it, from time to time.

There are three main reasons for this current dilemma in design research. Recently, in the developed world, 'design' has been promoted as 'a powerful tool in (an economic) downturn' [19]. A strong business case has been made to show that 'design' is more important now especially in business development. At the same time, developing societies are also beginning to realise the importance of 'design' to their economic development - as was the case from the 1960's onwards in the developed countries. Secondly, as Sanders [14] suggests, pioneers in design development from the developed world have been pushing the concept of people-centered design in order to replace the ethos of the market-driven era. The final reason is what Von Hippel [15, 16] has called 'democratizing innovation,' which describes people as lead users who develop and modify products to fit their needs. Rapid technological development and its impact on new social development such as the open source movement and the progress of *wikionomics*, i.e. the ease with which digital media can be manipulated in ways that enable mass collaboration that changes everything [17], has encouraged the development of a more significant design phenomenon in different societies where people without a formal design education are designing interactive websites, amazing photos, innovative videos and appealing music. As Mau et al [8] stated, "It's not about the world of design. It's about the design of the world".

2. Design with user involvement: how far?

Apart from business innovation, how may we more fully consider the social dimensions of design and what potential relationships there can be with social development/innovation? More and more ideologies and activities are happening in the design world to respond to this question by addressing social issues through the creative processes of design. It is clear that many design community members especially the young generation are working in the realm of people-centred design. Lee [7] suggests that designers or design researchers need to develop tactical techniques of design-- *creative tactics*--that are working *with* people and not *for* them. This has been more about attitudinal change and less about practical information for 'how to' conduct design participation. The next big challenge for humanitarian projects through design might be: *How may designers conduct participatory design processes that can ensure better design outcomes and enable people to understand the power of design as a discipline oriented toward everyday life activities?*

3. Inclusive Design – a case of people-centred design

One response from the design world is the Inclusive Design movement in the UK that focuses on the reflective question to designing for social inclusion [2], One knowledge transfer mechanism in this area called the Inclusive Design Challenge was started in 2000 by the Royal College of Art's Julia Cassim as an open competition for professional designers to explore design for social inclusion. It was inspired by a previous initiative, the Product Challenge involving older users, held under the DesignAge programme led by Roger Coleman at the RCA, which preceded the founding of the Helen Hamlyn Centre in 1999. People with different disabilities are invited to participate in project-specific critical user forums, brainstorm with the participating design teams and evaluate the resulting solutions. They are called 'the extreme users' who work among others users such as 'typical users' and 'boundary users,' responding together to design projects set up by designers. Gradually, the five-month-long competition has been successfully developed into different intensive versions

based on the Challenge template [3]. Their generic name is the Challenge W orkshops and they have been held in different international, academic and business contexts.   In some versions, the role of 'extreme users' has also evolved from design advisors and respondents to active design partners.

Having demonstrated that this is as an effective tool for designers to explore inclusive design methodologies in the UK, the Challenge model has been 'exported' to other cultures. Cassim has introduced this methodology in Japan, Israel, Singapore and the Scandinavian region and has developed it as a design and inclusion training workshop for companies and educational institutions. Balancing the involvement and interaction between disabled people and designers in the design process, the exported version of the Inclusive Design Challenge has resulted in a public discourse on social inclusion. In some cities, such as Hong Kong, this has been the first instance of disabled people being invited on a basis of equality as design partners to work with designers to co-create design projects that are inclusive and benefit the majority of people. Dif ferent 'extreme users' from local networks are invited and have gained new experiences in this collaboration with young able-bodied designers.

4. From exclusion (medical model) to inclusion (social model)

From this experience of 'exporting' a UK-based interpretation of the Universal Design concept known as Inclusive Design toward different cultural content, a NEW classification or explanation of design and disability was inspired. This new approach contrasts with the classic discourses of user participation in design such as Page's Users-vs.-Expert model [12] and Sanders' recent model of users-seen-as-subjects-vs.-work-as-partners [14]. The aforementioned models were questioned by Lee [7] as these models are only classifying practice into different types but not providing a practical structure/framework to understand design participation and encourage mutual understanding for more collaboration between designers, researchers and people.

Along similar lines to the Design Participation model developed by Lee [see 7] and tested in real design situations [6], we introduce a new Exclusion-Inclusion Framework, which aims to encourage understanding and works as an analytical framework for both researchers and practitioners. It is a new interpretation of the discourse of the medical and social model of d   isability. T able 1 shows the four types of activities between exclusion and inclusion, adapting Rieser's [20] manifesto *'integration is a state, inclusive is a process.'* Rieser's working method emerged from the debates over the medical model versus the social model of disability in disability research. The table defines different states that acknowledge the shift in perspective from a 'medical' to a 'social' model of disability . It provides a framework to understand each level of *exclusivity* or *inclusivity* of design outcomes in relationship with people with disability.

5. 'Exclusion-inclusion framework' – analytical tool to map inclusivity in design

Historically, d esign h as b een p racticed as an egocentric process with designers looking within themselves for answers to address the problem [10]. Each designer tackles a design brief using his or her own aesthetic values and likes and dislikes. This can often lead to design exclusion [9], in that the intended user cannot use the end product and therefore rejects the design. In the UK context, the development of social inclusion at policy level has reinforced the development of Inclusive Design, which was first introduced in the early 1990's [2]. The concept of design for social inclusion is quickly emer ging as a potentially important driver of positive change.

Central to this premise is 'getting to know your users' [1]. Through identifying those being excluded by design such as older and disabled people and involving them in the design processes, more inclusive products, systems or buildings are designed for the mainstream market.

Medical Model of Disability >>>Social Model of Disability			
EXCLUSON>	*Distinction between three approaches to disability by Richard Rieser [20]*		
	SEGREGATION>	<INTEGRATION	<INCLUSION
(Tends to emphasise)			
Discrimination	*Services to Disabled People*	*Needs of Disabled People*	*Rights of Disabled People*
Isolating Disabled People	*Categorising Disabled People*	*Changing Disabled People*	*Changing the environments and designs*
No consideration	*'Special'/ different treatment*	*Equal treatment*	*Equality – each person receives support they need to thrive & achieve their potential*
Ignore disability	*Disability is a problem to be fixed (in a special place)*	*Disability is a problem to be fixed*	*Everyone has gifts to bring*
No Service	*Services available in segregated setting*	*Benefits to disabled person of being integrated*	*Benefits to everyone, including all*
Professional/experts	*Professional/experts*	*Professional/experts*	*Political struggle, friends & support*
NIL	*'Special' therapies*	*Technique*	*Power of ordinary experience*
	Competition for parts of Disabled Person (only)	*Technical Interventions*	*Transforming power of relationship*
	Stress on inputs	*Stress on process*	*Stress on outcomes; have a dream*
	Integration 'for some' is not desirable	*Integration can be delivered*	*Inclusion must be struggled for*

Table 1. Exclusion-Inclusion Framework
Note: We take inspiration from Richard Rieser's distinction between three approaches to disability [20].

Before the introduction of the term Inclusive Design, the social dimension of design has been promoted by pioneers such as V ictor Papanek and more recently by design advocates and activists of social design such as Bruce Mau and John Thackara. In other words, 'design' is becoming a type of social activity , which relates to the development of societies. Starting from the influence of Goldsmith's *Designing for the Disabled* in the 1970s, the study of design and disability has remained an important subject among social issues,   Having become disabled at the age of 23 after an accident on a holiday trip to Italy   , Goldsmith gradually became an expert on design and disability and its relation to design especially in the built environment. His books are powerful because they were developed from the first-hand experience of a disabled architect. However   , because the purpose of his book is to persuade architects to consider the 'needs' of disabled people while they are designing, the preamble expresses a pity-based attitude where the professions are asked to 'help' the disabled:

'…[P]eople who are disabled are people who need help from architects, help in the planning of the houses they live in and the design and or   ganisation of the buildings they use for work, education, recreation… They need to be able to get the most out of life and they need architects to help them' [4].

In relation to the proposed Exclusion-Inclusion Framework (Table 1), Goldsmith's work represents more of a model of *integration* in that it emphasises the needs of disabled people but still remains in a professional/expert mode stressing the benefits to disabled person of being integrated. At the same time, his ideology is definitely focused towards inclusion since it aims to change our built environment and stresses the outcomes and the dream of the creation of perfect spaces for all.

Another recent example of design and disability is work of Graham Pullin who aims to influence the design professions in a different way. In his 2007 paper, 'When fashion meets discretion' [13], Pullin points out the power of design and its relationship with culture, which can change perspectives of difficult social issues such as disability and discrimination. By analysing the successful example of how spectacles were transformed from an assistive medical product to a fashion accessory, Pullin challenged the notion of discretion and encouraged more confident and accomplished design to support positive images of disability. Making assistive devices more attractive or even making statements by design, has the potential to minimise the stigma of disability. These design actions acknowledge the shift in perspective from a 'medical' to a 'social' model of disability. They are strong reflections from the design professions. However, the voices of disabled people are not directly heard in Pullin's proposals. Compared with the rare exception of disabled design professionals and those active as access auditors or advisors, his works provoke a strong discussion for design inclusion but are not comprehensive enough. Pullin's works stress that changing designs can benefit everyone and thereby encapsulate the dream of future design. Conversely, these provoking design ideas might not succeed in being comprehensive inclusive design since they miss some points of inclusion shown Table 1: expansion of the rights of disabled people; change in the 'power of ordinary experience'; transformation of the 'power relationship'.

6. Emancipatory Creative Tactics for those who are design-excluded

People with impairments are rarely involved in design processes. This is one of the reasons why some designs will create barriers for disabled people to fully participate in social activities and risk further disabling them or even excluding them further by not giving the support and friendship required to use many well-intended designs. The Inclusive Design Challenge emphasises designer-user partnerships, especially in the intensive version lasting one to three days when designers and 'extreme users' are in partnership to develop proposals for future changes in designs and propose inclusive products as well as aiming to empower disabled people. However, when this partnership model is brought to new social situations, the equality between partners (designers and extreme users). This was the case when discussion began one year ahead, relating to the organization of the Inclusive Design Challenge in Hong Kong [18]. Some extra activities were identified and implemented to inspire, train or enable disabled people to be 'active design partners'.

Figure 1: Disabled people were invited to 'teach' at a class of social work degree course

Based on the new Exclusion-Inclusion Framework, this section presents and explains a series of works done with a group of disabled people in Hong Kong before the Inclusive Design Challenge in 2008. Four '*Emancipatory Creative Tactics'* [5] were identified along with the terminologies from the framework.

6.1 Tactic 1: Design Exclusion

If there is no exclusion, we do not need to think about inclusion. Therefore, understanding exclusion is the first step to achieve inclusion. Yanki Lee, a design researcher worked closely with a local sociologist in Hong Kong and made friends with people with disabilities through introductions from local disability organisations. One of the 'friends' was invited to share ideas with a class of social work students (Fig.1). The responses of sorrow from the young students showed that there is lack of general understanding of disability in Hong Kong society. At the same time, the design researcher introduced the idea of design and its application to disability to the local 'extreme users'. Provocative topics such as love and the sex lives of disabled people emerged and were discussed which could be the foundation on which to build a trusting relationship.

6.2 Tactic 2: Positive Design Segregation

When the relationships were being set up, some 'customised design services' were delivered which brought into prominence the situation of disabled people to others by design. We call this 'positive segregation' by which we mean using design to make people feel proud of themselves. One of the activities was to design a special logo to represent Mucopolysaccharide Diseases (MPS) patients (Fig.2). The logo was inspired from interactions with two brothers who have both been diagnosed with the No.2 model known as MPSII. This became part of their signatures, as they put 'MPSII' under their names. This is an example of the special 'services to disabled people' that aimed to enable them to get out from a segregated setting.

Figure 2:
MPS logo inspired by interactions with patients, by Yanki Lee.

6.3 Tactic 3: Design Integration

Many of the disabled design partners who have participated in either Inclusive Design Challenges or challenges of shorter duration in the UK and other developed countries live independently and are active socially and on the work front. This differs to Hong Kong: there more disabled people are excluded in the society and interactions with design and designers have yet to be been introduced. As noted by Jenni-Juulia Wallinheimo, a textile designer and lead user of the Finnish Team who participated in the 24 Hour Inclusive Design Challenge held as part of the European Business Conference in Oslo in 2008 [19]: "It has been a great empowering experience for me because in most cases when people are designing products for me they are not interested in my knowledge, they only want information based on my weak bones and not based on what interests me." Participation is seen less as an exercise in social integration and more as a co-design process where the disabled participants are no longer subjects or ergonomic evaluators of existing designs (as per their usual role) but instead become active partners in a relationship based on creative equality. However, many people living with disability in Hong Kong

have no experience as ergonomic evaluators or access advisers and so the pre-challenge activities were aimed at getting them ready to work together on designs for social inclusion.

Figure 3: Collaboration with Ming Pao Weekly, Hong Kong popular culture magazine.

After all the informal interactions with different people with disabilities in Hong Kong, a collaboration with a local magazine was set up to conduct a media version of the Inclusive Design Challenge. Instead of an actual interactive event with a public audience, as is usually the case for the 48 Hour Inclusive Design Challenge, four stories were reported from the perspectives of the design researcher and sociologist with editorial input from a magazine reporter. All were based on interactions between an invited designer and a selected disabled person (Fig.3).

1.   A graphic designer was paired with a visually impaired university student.
2.   A design engineer was paired with a young wheelchair user.
3.   A fashion designer was paired with two brothers who are living with MPSII.
4.   A photographer was paired with an older woman with dementia and her carer.

All were dialogues of *integration*, where the stress was placed on process. Even though they were interesting experiences for the designers, the greater influence was actually on the perception of the disabled participants who saw this as part of a process of social integration. This is an important step of integration for disabled people in Hong Kong who have less experience with design and choice of lifestyles.

6.4 Tactic 4: Design Inclusion

After identifying and 'training' all the 'design partners' to participate in the Inclusive Design Challenge event, another workshop for volunteers was or ganised with design students and young disabled people, two groups of young people in Hong Kong society that are unlikely to work together in the normal course of events. Therefore, the workshop was set up to get them to work together to 're-investigate' their city and identify some new insights through the experience of their partners' disabilities. They were also introduced to the concept of inclusive design and the social implications of design in general. The intention was to equip them contextually to understand and assist the process of design inclusion during the Inclusive Design Challenge particularly since it involved participants from different cultures.

7. Conclusion

Finally, the Inclusive Design Challenge was successfully held in Hong Kong in 2008. Both teams who won the awards for best idea (Fig.4) and best presentation (Fig.5) were working with the 'design partners'-- people living with disability and young able-bodied designers--who had experience of Emancipatory Creative Tactics.

Figure 4: MPowerStyx: Chopstick mouse at the 48hr Inclusive Design Challenge in Hong Kong Aug 2008

From this experience of recruiting and training 'design partners' in Hong Kong, the Exclusion-Inclusion Framework was developed and employed to explain the four Emancipatory Creative T actics, which were all responsive actions developed along the process. The functions of this framework to the design community can be twofold:

- Comparing the different design projects by their level of inclusivity , e.g. MPowerStyx (Fig.4) is a design project more at an inclusion level because its delivered output, which provokes future thinking while Fruitball is more at an integration level.
- For individual design projects to improve their inclusivity , e.g. Fruitball might be more inclusive if the design team including the active design partner can push the focus from the needs and rights of disabled people and more to real inclusion of individual lifestyles rather than integration.

Figure 5: Fruitball: interactive game for all in the park.
Best Presentation at the 48 Hour Inclusive Design Challenge in Hong Kong, August 2008

As Ho et al. [5] quoted one participant as saying: '[the disabled design partner] kept saying that the game was designed for all consumers of the park and good for both people with or without disabilities… he expressed that he is not used to think about himself… he admitted that it might be the case that he seldom thought of his own needs.'

8. Discussion

The four Emancipatory Creative Tactics are action points developed from the Exclusion-Inclusion Framework. During the process, they became empowerment tools for the disabled community as well as preparation for participation in the Inclusive Design Challenge. The process was demonstrated through the Hong Kong experience and its primary function has become a practical guideline for designers to design inclusively . Since the whole process was a collaboration between a design researcher and sociologist, the cross-referring of exclusion-inclusion and medical-social model can be seen as a second application in the development of a common language for different professionals working in the field of disability . In this case, design communities and the social service community worked together with mutual understanding to design and deliver and set the basis to maintain more inclusive products, services and systems.

Equal dialogues can extend the impact of the Inclusive Design Challenge events as well as leave a legacy of design practice for social development. Inclusive Design practice raises questions such as: What if people do not know how to be included in design processes? How may inclusive design process enable social inclusion? How may designers recognize the importance of understanding cultural context to ensure effective user/designer partnerships? Such questions become constant reminders of how to maintain the quality of participation in design processes.

9. Acknowledgments

10. References

[1] British Standards Institution (BSI) (2005) BS 7000-6:2005 Design management systems. *Managing inclusive design*. London, BSI, 40.

[2] Coleman, R. (1994) 'The Case for Inclusive Design - an overview', in *Proceedings of the 12th Triennial Congress,* International Ergonomics Association and the Human Factors Association, Canada.

[3] Cassim, J. (2007) 'It's Not what you do it's the way that you do it: the Challenge Workshop a designer-centred inclusive design knowledge transfer mechanism for different contexts,' *Human Computer Interaction International* (HCI), July 2007, Beijing, China.

[4] Goldsmith, S. (1984, Third Edition), *Designing for the Disabled*, RIBA Publications Limited.

[5] Ho D, Lee Y and Cassim J (2009) 'What if … users do not know how to be inclusive through design', in *Online Proceedings of Include 2009*, Royal College of Art, London.

[6] Lee, Y. and Bichard, J. (2008) 'Teen-scape: Designing Participations for the Design Excluded.' In: *Proceedings of Participatory Design Conference 2008*, 1-4 October, 2008, Indiana University, Bloomington, USA, pp128-137.

[7] Lee, Y (2008) 'Design participation tactics: the challenges and new roles for designers in the co-design process,' *CoDesign,* Vol 4, No 1, 31-50.

[8] Mau, B., Leonard, J. and the Institute Without Boundaries (2004). *Massive Change*. Phaidon Press Limited, London.

[9] Myerson, J. (2001) Introduction. In: de Lucchi M (ed.), *The International Design Yearbook 2001*. Laurence King, London , pp6-7.

[10] Moggridge, B. (2001) *i Magazine: Magazine for the Design Council*, UK Design Council, Issue 6, pp12-13.

[11] Papanek, V. (1971,1992) *Design for the Real World, Second Edition*, Thames and Hudson, London

[12] Page, J. (1972) Planning and Protest. In: *Design Participation: Proceedings of the Design Research Society's Conference*, UK: The Design Research Society, pp113-119.

[13] Pullin, G (2007) 'When fashion meets discretion.' In: *Online Proceedings of Include 2007,* Royal College of Art, London.

[14] Sanders, E.B.-N. (2006) 'Design Research in 2006,' *Design Research Quarterly*, Design Research Society, Vol 1, No 1.

[15] Von Hippel, E. (1988) *The Sources of Innovation*, Oxford University Press, New York.

[16] Von Hippel, E. (2005) *Democratizing Innovation*, The MIT Press, London.

[17] Tapscott, D. and Williams, A. (2006) *Wikinomics: How Mass Collaboration Changes Everything,* Atlantic Books, USA and UK.

[18] Information on the 48-Hour Inclusive Design Challenge in Hong Kong can be found at:www.britishcouncil.org.hk/48hour/index.html and www.hkdesigncentre.org/en/about/design.asp and in Cassim J. (ed) (2009) *Challenge 2009*, Helen Hamlyn Centre, London

[19] www.designcouncil.org.uk/en/Case-Studies/All-Case-Studies/Design-in-a-downturn/

[20] Richard Rieser is an expert disabled international equality trainer , consultant and teacher. Richard Rieser was the founder and Director of Disability Equality in Education for 17 years until it closed on 31st March 2009. See http://www.worldofinclusion.com/integration_inclusion.htm