Per-Olof Hedvall

Per-Olof Hedvall, associate professor in Rehabilitation engineering and design at the Department of Design Sciences, Lund University, and Professor in Design at the Department of Natural Science, Design and Sustainable Development, Mid Sweden University.

Hedvall conducts research on accessibility, participation, and universal design. His current focus is on the implementation of Universal Design in Sweden, specifically on the subject of norms and categorisation and how categorisations create similarities and differences between people. The goal of his research is to develop new insights into design that does not lead to discrimination, inequality and stigma. (ORCID: 0000-0002-0962-2899)

Stina Ericsson

Professor of Swedish with a focus on Sociolinguistics and Interaction, University of Gothenburg, Sweden

Stina Ericsson is a sociolinguist with an interest in norms and categorisations, and how they are upheld and challenged through interaction between people and in relation to technologies and the physical environment. She has studied norms and categorisations regarding gender, sexuality, and dis/ability in a variety of settings and materials, including conversations between children and parents, consultations with Arabic-speaking pregnant women and Swedish-speaking midwives, print media texts, and photos submitted by the public as part of a citizen science approach.

Ericsson has a particular interest in transdisciplinary research, and is currently working on The Equality of Syntax project together with several of the authors in this volume, combining Linguistics with Architecture and Design Science. (ORCID: 0000-0002-0011-5030)

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From Inclusive to Nonclusive Design – A Shift in Categorisation

Per-Olof Hedvall and Stina Ericsson

Abstract

The background to this article is an interest in what categorisations such as 'persons with or without disability' create in terms of inequality and stigma, and how categorisations can support the implementation of Universal Design (UD). The article aims to show how a shift in categorisation can lead to a shift in the conceptualisation of UD, from "inclusive" to "nonclusive" design, i.e., to design processes that refrain from categorising people, bodies and roles. Our analysis is based on a range of photographs, images, and extracts from policy documents related to inclusion and exclusion collected in five recent research projects. Current ways to categorise will reiterate and perpetuate the current power structures, if not changed. In the article, we show what a shift from inclusive design to nonclusive design might look like in four types of artefacts: graphic design, physical products and environments, texts, and information and communication technology (ICT). Such a shift in categorisation will make it possible to meet variation with variation, and to ensure that the next product, program, or environment does not divide people into predefined boxes based on, e.g., their bodily configurations. However, working with nonclusive design will demand having just as rich an image of human variation and how to support it as ever before. In conclusion, we argue that Nonclusive Design *is*

Universal Design, completing the progress from barrier-free to inclusive to nonclusive design(ing).

Keywords:*Universal Design, Inclusive Design, Nonclusive Design, Accessibility, Norms, Categorisation*

Introduction

You cannot reach equality by focusing on inequality.

Still, a lot of research purporting to contribute to the understanding and realisation of equality actually deals with inequality. The same pattern can be seen concerning accessibility and the more negative inaccessibility. By contrast, Universal Design (UD) (Mace, 1985; Steinfeld & Maisel, 2012) has the potential to nurture development that remains on the positive side of this division.

UD has grown into a global phenomenon during the last 40 years. Early UD focused on barriers, aiming for barrier-free environments. Current UD instead strives for inclusive design, targeting all people (Kose, 2021; Steinfeld & Maisel, 2012). It is based on "inclusion" (Ahmed, 2012; Hedvall et al., 2022a) as a foundational concept. However, while UD has always had all people as the intended target group, in practice it is still largely understood to be about disabled people (Erdtman, 2024; Ericsson et al., 2020).

What supports human activity is not necessarily the opposite of what disrupts it. Soon researchers and practitioners realised that if someone only looks for barriers and how to prevent them, one misses a great deal of what supports activity. Living a full life presupposes barrier-free environments as a means but it is not an end in itself. This confusion of means and ends led to a deficit view of dis/ability,

focusing on the disruptive, negative side of action and with disabled people as the primary target group.

How one chooses to formulate texts is not innocent and current policy documents are ripe with deficit thinking. A good example is the United Nations Agenda 2030 (United Nations, 2015). Why is, for instance, Global Development Goal number 10 phrased as "Reduce inequality within and among countries"? What if SDG10 instead was phrased as "Enhance equality within and among countries"? The design space (Westerlund, 2009) shifts, shrinks and expands depending on the phrasing of goals and potential, and what design proposals can be reached shifts accordingly.

This article hinges on another such shift in formulation—or in this case: a shift in categorisation.

Aim

We are interested in what categorisations such as 'persons with or without disability' create in terms of inequality and stigma, and how categorisations can support UD-based development. This article aims to show how a shift in categorisation can lead to a shift in the conceptualisation of UD. Such a shift is far from neutral and the article also aims to explore some of its ramifications in terms of a shift from inclusive design to nonclusive design (Hedvall et al., 2022a). The analysis is based on a range of photographs, images, and extracts from policy documents related to inclusion and exclusion collected in five recent research projects.

Theory

The article engages three theoretical concepts in discussing inclusion and exclusion: Universal Design, Categorisation, and Nonclusion.

Universal Design

Universal Design (UD) is a concept with a rich history and prominent positions in current conventions and policy around the globe. UD is still tightly connected to disability—despite its origins focusing on creating a society for all. However, we argue that the concept also has untapped potential in terms of what kind of change it can bring about regarding how *difference* is understood and dealt with in society (Hedvall et al., 2022a).

The first time Ron Mace used the term 'Universal Design' publicly was in a now widely cited issue of the interior design magazine Designers West (Mace, 1985). Mace described UD as a design approach aiming to move beyond special, expensive and ugly solutions for limited groups to instead designing for 'everyone'. He saw disabled people as a source of knowledge needed to design for all – not a particular group in need of separate solutions. Mace characterised UD as design that is 'usable by all people'. Intentionally directing focus to mainstream solutions, Mace imagined UD tacitly providing access and even disappearing into its surroundings. However, this also brought about a tension between utilising disability knowledge in the design of products and environments and marketing these products without mentioning disability at all (Williamson, 2019).

Enhanced accessibility is one outcome of successful UD. But what is often forgotten, or at least tends to recede when discussing UD, is its early focus on societal development. In 1985, Ron Mace put this as:

> ***"Universal design is ultimately about changing attitudes throughout society, emphasizing democracy, equity, and citizenship. Universal design denotes a process more than a definite result." (Mace 1985, cited in Iwarsson, 2009).***

This understanding of UD as primarily a process concern has repeatedly been highlighted over the years by Steinfeld and colleagues (Maisel et al., 2017; Maisel & Steinfeld, 2022; Steinfeld & Maisel, 2012; Steinfeld & Tauke, 2002).

Categorisation

Categorisation has taken an increasingly prominent position in our studies on UD in recent years (Ericsson, 2023; Ericsson et al., 2020; Hedvall et al., 2022a; Hedvall et al., 2022b). We use the term 'categorisations' rather than 'categories' to emphasise the active processes (Hornscheidt, 2009), that are involved when someone, for instance, decides to put a number of pictograms of different persons in a row on a toilet door.

Categorisations are often done invisibly or tacitly. However, they involve power structures as they value certain perspectives and silence others and are always done to someone and by someone. Thus, they give advantages to some and disadvantages to others (Bowker & Star, 1999). To categorise someone is always a choice, and multiple categorisations are always possible, including no categorization (Ericsson et al., 2020). We regard intersectional thinking, where power structures are seen as overlapping, interacting and mutually constituting (Hamraie, 2017), as key for developing categorisation strategies that support UD.

The connection between inclusion and categorisation is important to note. Inclusion presupposes an inside and a corresponding outside. This division is created and upheld by categorisations. Categorisations can be quite sticky and it is easy to get stuck to a category. As Ahmed puts it: "we can be constrained even by the categories we love" (2012, p. 4).

Nonclusion

"Inclusion" is both an act and a state (Merriam-Webster, 2024). It is a global phenomenon underpinning both policy and research. The growth of inclusion has largely occurred uncriticised. Social inclusion has become a self-evident, taken-for-granted good, a 'truth' (Dunne, 2009). Spandler notes,

> ***"the notion of social inclusion is difficult to critique because, like other concepts in the Government's 'modernisation' agenda (such as 'choice', 'user involvement' and 'recovery'), it is presented as self-evidently desirable and unquestionable" (2007, p. 3).***

But inclusion also carries potent power perspectives and presumed shared norms (Canagarajah, 2022), where someone is positioned as the one to determine what it means to be included and who to include in "the included". An example of this is when people rely on additive strategies (Hedvall et al., 2022b) for inclusive signage, where pictograms are added in a row on a toilet door. This strategy has the drawback that it is based on pinpointing and including groups of people. No matter how many pictograms one puts in a row, there will still be some people that fall on the outside.

Inclusion is something of a paradox, where genuine efforts to tackle social inequality at the same time become another reification of power structures and marginalisation. This leads to power being redone rather than undone (Ahmed, 2012; Hedvall & Ericsson, in prep.). The growth of strategies other than additive ones can be seen as a sign of unease and discomfort experienced when including people, bodies, and roles. While well-intended, this strategy is doomed to always

carry delimitations and demarcations and, thus, to always be exclusive (Hedvall et al., 2022b).

In 2022, we introduced the term "Nonclusion" (Hedvall et al., 2022a) to open up space for an exploration of new ways to categorise that do not presuppose an inside and a corresponding outside. We defined "Nonclusive design" as:

> ***"design that resists categorisations of bodies/roles and that does not come with predefined or presupposed limits in terms of whom it is meant for" (Hedvall et al., 2022a, p. 85)***

While inclusion relies on prevailing, traditional ways to categorise, nonclusion is based on new, emergent categorization patterns that do not categorise bodies, persons, or roles at all.

Methodology

The study is based on material comprising photos and extracts from policy documents collected in recent years as part of our research on categorisation and UD. Participants submitted some images as part of citizen science studies (Riesch & Potter, 2014) on inclusion and exclusion, and we took some images ourselves as part of observational studies. The underlying analysis has had a hermeneutic (Sengers & Gaver, 2006) character and included both formal analysis sessions using NVivo and informal activities such as discussions of denotations, connotations and categorisations present in the photographs (Ledin & Machin, 2018) at project meetings, seminars and presentations. This has continuously advanced our understanding of what the photographs express, and over time, allowed us to identify and mature in our interpretation of patterns in the material.

A Shift from Inclusive Design to Nonclusive Design

Next, we move on to show what a shift from inclusive design to nonclusive design might look like in four types of artefacts: graphic design, physical products and environments, texts, and information and communication technology (ICT).

Graphic Design

Depicting UD seems to be an ambivalent phenomenon, where on the one hand the intended target group is 'everyone', but on the other hand, many features associated with UD still are labelled with the access symbol and understood to be for persons with disability.

In an analysis of signs on toilet doors, we identified and outlined three patterns for inclusive signage (Figure 1):

1) ***Addition, where inclusive signage is accomplished by adding more pictograms of different persons,***
2) ***Combination, where inclusive signage is accomplished by composite pictograms,***
3) ***Nonclusion, where nonclusive signage is accomplished by not depicting persons, bodies, or roles at all.***

(Hedvall et al., 2022b)

Figure 1. Three signs displaying three different ways to achieve inclusive signage: by addition, inclusion, or nonclusion (Hedvall et al., 2022b).

One salient difference between the three patterns is how gender is dealt with. Additive strategies categorise separate genders. While combinatory strategies, such as the one used on the composite all-gender pictogram, also categorise gender, it is done by combining genders instead of keeping them separate. In this case, the composite pictogram categorises the notion of 'gender' rather than specific genders such as 'woman', 'non-binary', etc. This contrasts markedly with nonclusive strategies, which do not categorise gender at all. In Figure 1, nonclusion is achieved by shifting from person to function with a sign showing a water closet with an armrest.

Physical Products and Environments

The affordance (Gibson, 1986; Norman, 2002) of physical products and environments influences who can go where, do what and contribute to what.

Figure 2. Two photos. The environment to the left separates people and is built on norm and deviation. To the right a bench that offers a variety of guests a variety of ways to sit.

Above are two photos (Figure 2). To the left is a photo of an entrance with a small step and a large ramp dictating peoples' movement when approaching the door. The environment separates an imagined "normal" person and those deviating from that norm will have to use the ramp.

To the right is a photo of a bench that offers a variety of ways to sit, with and without an armrest, with a pram or a wheelchair, etc. The bench is an example of a product that does not categorise people. Instead, it meets human variation with seating variation.

Text

When it comes to text and categorisation, inclusive design involves identifying and labelling groups of people. Two examples are the following:

1) **"People with disability have the opportunity to reach educational goals on the same terms as others." (City of Gothenburg, Program för full delaktighet för personer med funktionsnedsättning 2021–2026. Translated from Swedish to English by the authors.)**
2) **"Infrastructure can, through its design, contribute to a more cohesive society where the rights to accessibility for all are safeguarded. A large diversity of travellers with different preconditions and needs, e.g., children, young people, older people, girls, boys, women, and men raise high demands on an accessible society [...] so that all can use it. This means e.g., that the transportation system has to be accessible for people with disability." (Government bill 2016/17:21 Infrastructure for the future: Innovative solutions to strengthen competitiveness and sustainable development. Translated from Swedish to English by the authors, see also Ericsson et al. 2020 for an extended analysis)**

In the first example, two opposing groups are identified. One group is labelled *people with disability* and the other group is labelled *others*. These categorisations, in the context of the sentence in which they

occur, convey that the two groups are clearly separate and that the individuals within each separate group are homogenous in relation to (not) reaching educational goals. This is how categorisations work, ignoring differences within groups and exaggerating differences between groups (Leason, 2024). The two groups in the first example are also labelled very differently: one group is labelled according to an assumed impaired function or ability, whereas the other group – *others* – is assigned no characteristics at all, which works as a privileged position here. Additionally, the comparison between the two groups that the sentence contains, makes *others* the norm for *people with disability.*

A nonclusive version of example 1 might be:

> **1') Everyone has the opportunity to reach educational goals, irrespective of abilities.**

This version resists categorisations of people and does not rely on norms and non-norms.

In the second example, *all* in the first sentence is categorised into smaller groups in the subsequent sentences: *children*, *young people*, *older people*, *girls*, *boys*, *women*, *men*, and *people with disability*. This is an additive strategy and has the disadvantages of pinpointing specific groups. A nonclusive version need not use categorisations of people at all, and instead of making assumptions about people's *preconditions and needs* may focus on what the infrastructure itself can provide:

> **2') Infrastructure for travelling can be designed to contribute to a more cohesive society. Such infrastructure is designed with respect to supporting the entire population to travel from door to door,**

minding, e.g., different seasons, security, comfort, and travel patterns.

This version directs attention away from the individual traveller towards the entire travel chain and all situations occurring there.

Information and Communication Technology

The field of Information and Communication Technology (ICT) does not get anywhere near the credit it deserves for its nonclusive potential.

People working with developing ICT have never been particularly obsessed with user groups. Rather than focusing on *who* is allowed/intended to use a website or a piece of software, much more has been invested in *how* to support people in using ICT. This has had many positive effects, such as the growth of User Experience (UX) and is clearly in line with nonclusion.

Currently, the field of ICT is piloting and paving the way and serving accessibility initiatives on a European level. Today, EN 301549 European standard for digital accessibility, has become part of the legislation in several European countries. Next to follow is the implementation of Mandate 587, which requires that economic actors (manufacturers, distributors, importers, etc.) of certain products and services meet minimum accessibility requirements by June 28, 2025.

Figure 3. Icons for access/accessibility options in Windows XP, Windows 95, Windows 7, Windows 10, and Windows 11.

The icons for access and activity-supporting functionality in Figure 3 are from Windows XP, 95, 7, 10, and 11. When Windows XP launched in 2001, there was a wheelchair sign depicting accessibility options, which can be seen as an inclusive approach. Over the years, the wheelchair symbol has been made more abstract, depicting functionality. There was a significant shift in icons between Windows 10 and Windows 11, where the later got an icon depicting a generalised person instead of something reminiscent of a wheelchair, like the previous versions had.

Figure 4. Icons for access/accessibility options in the current versions of Andriod, iOS, and Mac OS.

The current versions of Android, iOS, and MacOS, also have an icon with a generalised human person to mark the corresponding functionality for access/accessibility (Figure 4). What started as functionality for disabled persons is today depicted as being for everyone. But, the functionality is still categorised by a human person. Guided by nonclusion, the next step in this evolution could be to shift the categorisation – and thus, the narrative – to deal with activity-supporting options instead, this way refraining from categorising the functionality in terms of people, bodies, and roles.

Concluding discussion

Nonclusion is intended to be used in all stages of design. One limitation of this article is that the examples are only of finished artefacts, and not from design processes. But, we do hope that the

descriptions of the underlying theories and the examples we bring forward leave a scent in the air of a possible future design less obsessed with categorising people, bodies and roles.

A reasonable objection to nonclusion is that it will disguise rather than promote diversity, creating just another loophole and escape route for manufacturers and other actors trying to underserve the societies they are part of and dependent on for their business. Working with nonclusive design will demand having just as rich an image of human variation and how to support it as ever before. However, understanding and recognising diversity does not presuppose relying on the current ways to categorise when designing. On the contrary, maintaining the present categorisation will reiterate and perpetuate the currently dominating power structures, that are based on inside-outside logic.

Where to start the transition towards nonclusive design? We suggest starting by applying the pattern "From person to function" described above. Such a shift in categorisation when designing is an example of what will make it possible to meet variation with variation, and to ensure that your next product, program, or environment does not divide people into predefined boxes crafted based on, e.g., their bodily configurations.

In conclusion, Nonclusive Design *is* Universal Design. It lingers on the horizon as a possible 3rd generation of UD, completing the progress from barrier-free to inclusive to nonclusive design(ing). All three generations each have their merits and are still valuable and relevant parts of UD. The factors and strategies they together encompass offer a more complete image of how to work based on UD to realise a society for all.

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