

RESEARCH PAPER

Situating universal design architecture: designing with whom?

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Abstract

Purpose: To respond to growing calls for a theoretical unpacking of Universal Design (UD), a disparate movement cohering around attempts to design spaces and technologies that seek to allow use by all people (to the fullest extent possible). The on-going embedding of UD into architectural practice and pedagogy represents an opportune juncture at which to draw learning from other distinct-but-related transformatory architectural movements. **Methods:** Sociological-theoretical commentary. **Results:** UD has to date, and necessarily, been dominated by the practice contexts from which it emerged. Appealing as a short-hand for description of “designing-for-all”, in most cases UD has come to stand in as a term to signal a general intent in this direction and as an umbrella term for the range of technical design resources that have been developed under these auspices. There remains a fundamental ambivalence vis-à-vis the question of users’ power/capacity to influence decision-making in the design process in UD; technically-oriented typologies of bodies predominate in influential UD architectural accounts. **Conclusions:** UD represents rich technical and pedagogical resources for those architects committed to transforming the existing built environment so as to be less hostile to a wide range of users. However, within UD, unpacking the social role of the professional architect vis-à-vis a variety of publics is an important, but hitherto underdeveloped, challenge; issues concerning professional-citizen power relations continue to animate parallel architectural politics, and UD can both contribute and draw much from these on-going explorations.

Keywords

Architecture, participation, universal design, users

History

Received 17 November 2013
Revised 4 July 2014
Accepted 9 July 2014
Published online 28 July 2014

► Implications for Rehabilitation

- Universal Design (UD) architecture shares a close affinity with rehabilitation practice, with the creation of built environments that allow use by individuals with a wide range of capacities a priority for both.
- While an effective communicative “bridge” between professions, UD’s deployment typically leaves unspoken the capacity of users to meaningfully affect decision-making in the design process.
- UD architecture has much to draw from, and contribute to, parallel movements in “participatory architectural design”; debates therein have illuminated much about the social practices underpinning designing for difference.
- UD could engage more fully with questions relating to the social and political role of the architect.

Introduction

Change life! Change society! These precepts mean nothing without the production of an appropriate space [...] new

social relationships call for a new space, and vice versa ([1]: page 59)

Architectural design is frequently drawn upon as part of attempts to challenge existing forms of social order and to deliver spaces that will symbolise, or even catalyse, more equitable social worlds [2–8]. Meanwhile, much critique has addressed the entanglements between architecture and *existing* social order, including relative to what could be termed the “architecturally disabling” [9] nature of large parts of the built environment (e.g. [8–14]). An implication of these distinct-but-related literatures is that historically and contemporaneously architects have designed spaces that privilege certain bodily capacities over others [12,15]. Against this backdrop, Universal Design (UD) has

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the following related starting points: that (i) the built fabric of cities is experienced by many as hostile to their bodies, mobilities and understandings of space; and that (ii) better architectural design may militate this situation. When stated thus, the appeal of UD is certainly not difficult to appreciate.

The architect and designer Ronald L. Mace, who coined the term UD, and after whom a major research centre is named, saw the movement as encouraging the “design of products and environments to be useable by all people, to the greatest extent possible, without the need for adaptation or specialised design” [16: page 4]. The readily-communicable, intuitively-desirable nature of this and other key statements of UD (e.g. [17–23]) has seen what are in actual fact diffuse and often only loosely connected interventions becoming widely resonant in the spheres of politics and design. While claims that the movement represents a “century’s worth of change in a decade” [24: page xxiii] are over-stated, UD has been incorporated into declarations of the United Nations and World Trade Organisation, and national policy statements in Australia, Brazil, Germany, India, Italy, Japan, USA and the Netherlands [21: page 1.5, 24: page xxiii]. The discourse is also widely resonant across fields of rehabilitation [22,25–27], education policy [18,28,29] – including in architectural pedagogy [30–33] – and in the development of assistive technologies [34]. Although yet to be “mainstreamed” in architectural practice, such has been the impact of the movement relative to accessible urban design that one commentator has described UD as a “new orthodoxy” [35: page 874].

It is against this backdrop that calls from a range of disability scholars for an unpacking of UD have grown apace [35–39]. Here, I explore the relationship between UD and architecture in particular, and focus on the presently ambiguous capacity of the user to affect decision-making therein. The article is divided into three main sections, plus an introduction and conclusion. Section 1 considers the aforementioned calls for an unpacking of the foundational assumptions of UD [35–39], analysing why the discourse has to date proved so successful at setting the tone for a wide variety of political and design interventions and questioning the extent to which the search for a coherent definition of the movement has distracted attention from the wider politics of this approach architectural design. Second, the article situates UD relative to those “participatory architecture” interventions that have sought to problematise unequal architect–user relations in mainstream professional architectural practice [3–7]. As UD principles and working methods continue to percolate into architects’ practices, the centrally-important but hitherto under-developed role of the user is suggested as a crucial political consideration for discussion. Third, Antonio Gramsci’s concept of the “organic intellectual” is suggested as one device for illuminating user–architect relations vis-à-vis decision-making in the architectural design process. In general, the article addresses a series of issues concerning users, participation, and power in architecture, which are typically underplayed in discussions of UD.

Universal design: some initial observations

The meaning of “Universal Design” has proliferated as a concept with ideological, political and epistemological resonances beyond its original design context [38]

For many, certain types of architecture make the social world a more difficult place to dwell. As with rehabilitation, architecture interfaces with the everyday, with bodies and mobilities; resultantly interventions in the built environment have important

material impacts on people’s lives. “Architecturally disabling” [9] outcomes continue to be prevalent in cities the world over (e.g. [32,33]), and understanding the built environment through the lens of a social model of disability (e.g. [8–14]) suggests profit in examining architecture as one way of developing spaces that facilitate people’s social functioning.

Those seeking to use UD to realise a human-made environment better sensitised to the demands of a wide variety of bodies and uses are faced with an initial problem of definition: what is it? Elastic usage of the term across a disparate range of fields including but-not-limited-to rehabilitation [25–27], product design [40], politics and policy [17,19] and architecture [10,31,35] makes this fundamental task a difficult one. Due to its emergence from very different practice contexts in a wide variety of places, UD has a diffuse character. Quests for a comprehensive definition of UD characterise much of the literature [20,21,29,31,41,42]. Some UD scholars have themselves expressed frustration at fuzzy application of the elusive and ambiguous term [21: page 37], noting that “unfortunately... UD has been inappropriately adopted by some architects... as a trendy synonym for compliance with the Americans with Disabilities Act”. On approaching the UD literature, one is struck by a growing cleavage between on the one hand programmatic documents and handbooks communicating technical design principles [17,18,23] and on the other calls for a more philosophical engagement with UD’s epistemological foundations (e.g. [35–39]).

One response to the increasingly vexed question of UD’s definition has been to return to sources so to speak, by revisiting the canonical contributions of Mace [16,21], who developed UD as a way to describe and encourage the design of spaces that facilitated as many uses as was possible. In order to crystallise the concerns of the emergent movement, a group from the Center for UD at North Carolina State University, working with Mace, distilled disparate design cases and writings from the tradition into a coherent, seven-point manifesto [11]. The headlines of this exercise are by now likely to be familiar to many:

- (i) Equitable use
- (ii) Flexibility in use
- (iii) Simple and intuitive use
- (iv) Perceptible information
- (v) Tolerance for error
- (vi) Low physical effort
- (vii) Size and space for approach and use

Although often providing a starting point for those looking for a definition of UD, and despite the concision and clarity that characterises this statement, it is sufficiently elastic so as to potentially include a bewilderingly wide range of design interventions. There remains something elusive in these ostensibly incontestable and unambiguous non-technical statements of UD, which warrants further engagement [35–39].

UD has crucial affordances in both providing a frame for like-minded designers in different professions to communicate within, and also in acting as a “short-hand” non-technical communication of design practice to those outside of these professional fields. For example, policy makers or planning regulators are both key constituencies for UD architects to engage and persuade, not least as the implementation of accessibility rules often rests on a “moral obligation” rather than “hard” policy and regulatory statements [22: page 5.3], making enforcement of accessibility principles a negotiated exercise in which UD can be deployed to political effect. UD is necessarily dominated by the practice contexts from which it emerged. These are not typically or primarily philosophically or theoretically-oriented disciplines [35,38,39], and while it would be a scholar’s fallacy to expect

to find philosophical treatises on UD in documents and resources designed for very different purposes, at the same time as a direct result of this practical orientation there has been little attention paid to the epistemological underpinnings of UD (as observed in refs. [5,9–11]).

Accordingly, claims that UD constitutes “a new *philosophical* position for the practicing professional” [43: page 180, my emphasis] seems to invite further unpacking. It has been observed that UD’s popularisation has been accompanied by an unquestioning acceptance of its working assumptions [35–39]. The proliferation of UD has certainly often been accompanied by an acceptance of the normative desirability of the concept, with “writings about UD tend[ing] to accept it is a good thing and focus[ing] on evaluating its technical feasibility, practical applications and operational outcomes” [35: page 874]. The taken-for-granted desirability of UD has even led one commentator to suggest that the discourse sometimes has a somewhat “evangelical feel” [43: page 181].

The tendency for systems of thought to over time become normalised orthodoxies – increasingly secure in their normative assumptions and modes of working – has been described as “black-boxing” [44,45], a process which functions to “transform an input to output [with users] not needing to know how the transformation is made in order to use the box” [46: page 14, 15], so making professional and other knowledge systems less open to scrutiny from the “outside” [47]. If one response to the putative “black-boxing” of UD has been to seek illumination by tracing its origins [25,37,38,42], another has been to pursue theoretical analysis of what lies “beneath” the movement, with calls for unpacking of the foundational assumptions of UD having grown apace in recent years [37–39]. The most persuasive of these calls has been made by Sociologist Rob Imrie, who has engaged with the “underlying assumptions about disability and design shaping the content of UD” [35: page 874]. Imrie has argued that key statements from within UD bear the hallmarks of technicist responses to disability, with the resultant outcome that the movement’s value base often displays “vestiges of a medical model [with] clinical and physiological rather than cultural (social) criteria . . . shaping its design mentalities and approaches” (ibid) (for similar engagements see also [20,37–39,41]).

Taking as a point of departure Imrie’s observation that there is “little or no evaluation of [UD’s] underlying principles and its theoretical and conceptual content” [35: page 872], I would argue for a refocusing of such calls. As UD is being deployed in so many differing contexts, analysis of definitive underlying foundations is not possible, and attempts at such interrogation frequently require a significantly partial reconstruction of the movement’s otherwise scattered fragments before this work of analysis can begin. D’Souza’s [37] case for positioning UD as a critical theory illustrates these tensions. In seeking to make a case for UD’s correspondence with critical theory, D’Souza is necessarily required to create unified and coherent versions of a diffuse, disparate intellectual tradition against which to compare/situate UD, from my reading itself a diffuse and disparate set of representations and other endeavours. Despite elsewhere in her thought-provoking chapter suggesting that in practice the movement is not dominated by one particular paradigm or epistemological perspective, D’Souza’s account risks positing a coherence on UD – and critical theory – not always evident in their widely variant application. In short, while UD is being mobilised by those committed to far-reaching social transformation of the built environment, it is also being used to shape military applications [21,35] and commercial applications [40], sites where critical analyses are eschewed in favour of “what works” functionalism. In this context, any “foundations” of UD are only as stable as actors’ capacity, and appetite, to construct

them as such [46–48]. What these variant uses have in common is their description as “UD”, and looking for a common thread or sense of purpose amid all this difference can mean we miss the point of the way this description is being used coherently in practice.¹

In the next section, I propose an engagement between architects deploying UD and those participatory architectural initiatives that have attempted to “put the user at the hub of any design exercise” [35: page 110]. A general concern here is to draw learning from this body of participatory work so as to allow sharper focus on the social *processes* through which architects engaging with UD might understand the role of “non-architects” in designing buildings and spaces.

Challenging an “absent present”: architectural design, users, and participation

“The User” is a designer’s object, a construction which is effective only in so far it conforms to what all reasonable participants to these design process see might be the case [49: page 11]

We all use concepts, “abstract entities [to] selectively organise experience” [50: page 437], when making sense of the world and acting in it [49,51,52]. And in professional contexts, including rehabilitation [27] just as in architecture [6], the use of concepts both helps us organise experience and forestalls any immediate requirement to unpack completely every statement/act we make about/in the world (which is/are necessarily always contingent on many others [46–48,51,52]). For example, “patient” or “student” are concepts routinely put to use in professional life in hospitals and universities, respectively, to simplify complexity and allow communication of meaning; despite covering a range of complexities and differences – and sometimes coming to become associated with problematic hierarchies – the deployment of these concepts helps organise otherwise more complex social situations [50].

A major appeal of the concept of UD lies precisely in the fact that its deployment allows for a kind of a “bracketing off” of all the messy and complex relations entangled in design philosophy and practice. Indeed, as UD has come to stand as a proxy for a generalised approach to design, it can be understood as a device for giving structure to a bundle of otherwise ill-structured issues concerning accessibility, frequently being used as an effective communicative device vis-à-vis design philosophies, in effect acting as a “holding position” that forestalls the requirement to “unpack” every assumption about the world, while allowing designers to get on with the demanding practical tasks at hand [44,47]. However, this is not to say that there is an important task in interrogating further the sets of issues “bracketed off” by practicing architects going about their work [35–39].

¹Otto Neurath’s famous anti-foundationalist metaphor of the boat suggests that despite, and often actually because of, professional expertise and scientific understanding, we are all lost at sea. He suggests we “[i]magine sailors who, far out at sea, transform the shape of their clumsy vessel from a more circular to a more fish-like one. They use some drifting timber, besides the timber of the old structure, to modify the skeleton and the hull of their vessel. But they cannot put the ship in dock in order to start from scratch. During their work they stay on the old structure and deal with heavy gales and thundering waves. In transforming their ship they take care that dangerous leakages do not occur. A new ship grows out of the old one, step-by-step – and while they are building the sailors may already be thinking of a new structure. . . The whole thing will go on in a way we cannot even anticipate today. That is our fate” [59: page 46–8]. I am very grateful to Michael Mair for introducing me to this metaphor and to Neurath’s work in general.

Drawing on Donald Schön's seminal analysis of design [52], sociologists Wes Sharrock and Bob Anderson have studied the conceptual resources that "designers use to construct their design worlds" [50: page 5]. Through ethnographic study, Sharrock and Anderson conclude that the concept of "the user" does crucial work for designers in demarcating a particular "space" in the design process, for example, around which the functionality of machines can be ordered and measured. Paradoxically, the concept of "the user" comes to occupy a central-yet-passive status in design practice; drawing on earlier coinage of Mike Lynch's, Sharrock and Anderson argue that "users" often come to constitute a "scenic feature" of design process, representing a conceptual element simultaneously crucial to the "structuring of design worlds" [50: page 13], but that leaves unspoken the capacity of actual users to materially shape decision-making therein.

The problematic assumptions that frequently underpin the architect–user relation is a starting point for participatory architectural approaches. Although itself a contested domain reflective of many of the definitional issues that bedevil UD, for present purposes participatory architecture can be understood as an umbrella term given to an "extended family" of practices that challenge problematically unequal power relations between architects and their publics [3–7]. Participatory architecture rests on the general notion that, even assuming the best technical knowledge and professional expertise, in democratic societies it is not possible to justify making decisions and interventions that will impact directly on the lives of people without ensuring their meaningful involvement [3: page 6]. Debates on how to meaningfully include/empower users are not limited solely to architecture of course, and there are many parallel explorations in rehabilitation [27,53]. Participatory approaches are characterised by experimentation with public involvement that – while bringing with it lots of additional communicative challenges – is understood not only to ensure democratic legitimacy but also to improve the quality of outcomes by bringing into the process the privileged perceptions and expertises of users (with democratic "design-making methodology" [33: page 408] enriching the resultant spaces/interventions). From the perspective of architects engaged in this debate, democratic professional practice is unlikely to be guaranteed from within the profession itself, with full public scrutiny of decision-making much more likely to better decide upon limits to legitimacy [46–48].

Many of the twentieth century and contemporary experimentation with different modes of participatory architecture have sprung forth from political movements exploring fundamental social change [3,7], with radical challenges emerging from far-reaching critiques that encourage a radical rethink of architect–public hierarchies. Problematising the very basis of much professional self-perception and distinction, the conclusion of some of this wide-ranging experimentation has sometimes been that "all barriers between [architects] and users must be abolished [and] the forced passivity of the user must dissolve in a condition of creative and decisional equivalence" [De Carlo, cited in 5: page 132].

A major part of these critical stances has been to interrogate the role of the state and related professions, and against this backdrop it is something of a paradox that "participation" has become embedded in the very institutional contexts it set out to critique. National policies and building regulations around, for example urban development, housing, and regeneration, have to varying degrees mainstreamed obligations towards including participation or consultation with affected communities and users [7]. This embedding of participation in regulatory contexts has also led to a number of unanticipated and unintended consequences [3,5–7], including those architectural initiatives

designed to empower users in decision-making leading to "the same old patterns of power repeat[ing] themselves". In attempting to satisfy regulations these response often end up with a bureaucratic formalism, with too often citizen involvement a "token, bringing a degree of worthiness to the architectural process without transforming it" [5: page 13]. In other words, the very attempts to hear the voices of users paradoxically "stiff[es] the sound coming out" [5: page xiv; 41: page 24]. It is also in the context of the widened take-up of what passes for participation that accounts have proposed increased professional scrutiny of the things done under these auspices, lest the politics of participation become too "settled" and unquestioned. Suggesting that "[w]hen we plan 'for' people... we tend, once consensus is reached, to freeze it into permanent fact" [4: page 13], a major contention from this discussion is to reject positive normative associations given to "participation" where they exist in favour of approaching these practices with a sense of the politics and power relations at play therein.

This vignette of participatory architecture should give us pause concerning the role of citizens in UD. To date, UD research initiatives have focused overwhelmingly on built outcomes of design rather than the processes that lead to such. With some notable exceptions [16,21] UD advocates have had relatively little to say about the capacity of users to shape design outcomes, with key contemporary accounts tending towards communicating within the community of UD practitioners [20,22]. This is not to say that there is no discussion of users in UD though, as under the auspices of the movement there have been many attempts to formulate more precise and refined categorisations that move away from normate versions of "the user" common in architectural practice [6,15,35]. An example of this is Marten Wijk's injunction encouraging UD designers to "not think in terms of people, but to look at *every aspect of human functioning*" [41: page 101, my emphasis]. While designing architecture necessarily requires some notion of the types of bodies and mobilities that will use them, no matter how nuanced or technically precise these conceptualisations of users are, from the perspective of the participatory architectural literature discussed above if citizens are not involved in materially shaping the outcomes of the design process, they risk reproducing a "scenic", disempowered, notion of the user. The next section uses the work of Antonio Gramsci [54] as a way of highlighting the professional challenge for UD architects seeking to develop "a renewed focus placing the user at the hub of any design exercise" [37: page 110].

UD and organic architects

Architecture is too important to be left to architects [4: page 13].

In a distinction has some import for rehabilitation and architecture alike, the Marxist philosopher Antonio Gramsci (1897–1937) contrasted "traditional" and "organic" intellectuals [54]. "Traditional intellectuals" are those professionals whose self-understanding is contingent on a disinterested [*sic*], pseudo-scientific approach to knowledge, and who are connected to institutions that maintain highly asymmetric power relations with users. In contradistinction, "organic intellectuals" are reflective of the interests and experiences of politically subordinated and marginalised groups. Whereas "traditional intellectuals" want to consider their insights as somehow distinct from everyday social life, containing authoritative "solutions" to the social problems of the less powerful, the "organic intellectual" is embedded within the very social worlds with which they engage, and are frequently outspoken critics of the structures and practices of their own professions (where they maintain

inequalities or obfuscate the accountabilities for the impact of professional decisions). Gramsci's notion of professionals as "permanent persuaders" willing to marshal their expertise and resources in the service of outcomes more favourable for the dominated [55: page 129] bears further scrutiny.

Drawing from Gramsci's perspective, a key challenge for UD architects becomes not solely the design of accessible built outcomes but also in spearheading a way of approaching the design process itself that eschews "black-boxed" processes and unequal hierarchies between designer and designed-for. A critique of the mainstream, normalised, architectural practices and processes that lead to such unfavourable built outcomes [8–14,35,43] is certainly implied by UD accounts, but challenging dominant notions of the user as a "scenic feature" [50] in the process means making more explicit the *politics* of design, always implied by UD but often left unstated. In other words, UD architects cannot rely on implied normative principle to enculture and embed change in designing; here and elsewhere [43] I have argued that such a task necessarily entails an explicit critique of existing ways of practicing architecture that do not take sufficient account of difference.

Although operating in a different intellectual tradition to Gramsci, Otto Neurath also had much of import to say about professional knowledge in democratic societies [47,50]. Arguing that professions have no privileged insight into the "correct" responses to social problems – they are always by definition normative questions for the realm of politics – Neurath critiques the search for an objective "scientific" basis to justify technical interventions as a problematic starting point. Neurath saw the major responsibility of professions as lying in the identification of a range of *alternative* responses to social issues, and of setting out the parameters and routes of differing strategies that could be pursued in pursuit of the same, democratically decided upon, goal [47,50].

Architectural learning and teaching provides a major opportunity to engage generations of architects of the future in this task, and the affordance of UD pedagogy is something that variants of the movement have engaged fully with [21,30–33,56]. But from Neurath and Gramsci, if UD is to provide resources for a sustained *cultural critique* as an embedded part of architectural design pedagogy [57: page 185], this will require avoiding the tendency towards taking-for-granted the normative or political desirability of such interventions. Retaining a sense of the entangled and political nature of the issues at stake in UD architecture is not to diminish the role of the professional, but to suggest an engagement with the social role of the architect – and their relationship to users – that can go further than it does at present. Actively facilitating scrutiny of the design process from those outside the "black-box" of design does however mean architects must seek to reveal the assumptions at play, and so actively challenge the illusion of the "objective, scientific" basis of professional judgement [46–48].

Conclusion

It must be possible to design better [58: page 21]

Architects deploying UD as a way of "designing better" face a key challenge vis-à-vis developing and embedding appropriate modes of user participation in the process. While UD continues to play an important part in "develop[ing] a politics of design that will challenge the [...] sources of disablement in society [35: page 880]", hitherto this engagement has been primarily technical, with critical analysis of the professional-user decision-making nexus at present under-developed. Indeed, "users" are often positioned in problematic ways in UD accounts, with

technical representation of bodies and mobilities featuring prominently while the capacity of "non-professionals" to materially shape decisions and outcomes remains by-and-large absent. Here it has been suggested that attempts to reconfigure professional architecture as more participatory in this respect can add much to UD, with analysis of such illuminating power relationships between user–architect, and guarding against any romanticised notions of participation that can serve to leave the politics of these transformatory interventions unquestioned [3,7].

UD's popularity to date is explainable in part because of its capacity to operate as a "flag of convenience" under which many design-for-all initiatives can "sail", with the success of the movement evident in its setting the tone of interactions across a range of practice sites. It is something of a paradox that the proliferation of UD approaches has been accompanied by a thoroughgoing search for epistemological foundations; UD's conceptual coherence or otherwise is of less significance than the practical interventions that its deployment allows for [59–65].

Architects' professional skill is associated with expanding the scope of possible vis-à-vis buildings and the spaces surrounding them, but they do not do this in a social vacuum (or in conditions entirely of their own choosing [43]). In addition to the constraints associated with client-relations and regulatory contexts, architects' socialisation into prior genres and modes of working can serve to render less visible the "architecturally disabling" [9] nature of the built environment and the normalisation the design process that gives rise to such. Disrupting this status quo is a crucial contribution of UD research and practice [59–65].

Acknowledgements

Thanks to the editors of this edition Rob Imrie and Rachel Luck, and the anonymous D&R reviewers, all of whom made constructive and perceptive comments on the article. In addition, Jeffrey Chan, Monika Grubbauer, Andrew Kirton, Michael Mair, Maike Pötschulat, and Jarmin Yeh helped me sharpen considerably the article's central claims. The usual disclaimers apply.

Declaration of interest

An earlier iteration of this article was developed for the "Understanding Universal Design" seminar at King's College London, which was funded as part of an ESRC Seminar Series entitled "Designing Inclusive Environments: From Theory into Practice".

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