

Alternative Design Scholarship: Working Toward Appropriate Design

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Design scholars from diverse fields have attempted to assist marginalized social groups by redirecting design thinking toward their needs. By offering alternatives to dominant design activities, “alternative design” scholarship seeks to understand how unequal power relations are embodied in, and result from, mainstream design practice and products. Alternative design scholars analyze how technologies and other designed artifacts are implicated in larger social problems, such as rampant consumerism, sexism, ecological abuse, lack of user participation and autonomy, and restricted access to built environments, among others. Through these efforts, alternative design scholarship offers designers an opportunity to think about how their work might be directed as wisely and fairly as possible.

Efforts to redirect technologies toward the needs of marginalized people have a long and varied history. Dating back to the 1960s and before, technology transfer advocates argued for transferring Western technologies to the third world.¹ They hoped to take advantage of the intellectual and financial resources already invested by the West to benefit those who seemed to need technology the most. But it soon became evident that the transferability of technology among contexts is far from straightforward. Limited resource availability (capital, expertise, spare parts, etc.), different perspectives on the nature of the problem/solution, and a lack of familiarity with similar technological systems led to dashed hopes and expensive failures for technology transfers, such as the numerous decentralized power systems fallen into disuse throughout the developing world.² Technology scholars came to realize that differences between a technology’s developmental context and its use context were significant.

In part as a response to failures of technology transfer approaches, “appropriate technologists” argued that context suitability should be central to identifying technologies relevant to poor people of the Third World and other marginalized social groups.³ Developing appropriate technologies required accounting for the needs of others by paying careful attention to the use context of that technology, as well as to local perspectives on the problem to be solved. Attention to contextual particularities became one of the guiding approaches to appropriate technology and, hence, unlike technology transfer scholars, appropriate technology thinking took *design* as the point of intervention. Through the 1970s, appropriate

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- 1 Werner J. Feld, “The Transfer of Technology to Third World Countries: Political Problems and International Ramifications” in Mathew J. Betz, et al., eds., *Appropriate Technology: Choice and Development* (Durham, North Carolina: Duke Press Policy Studies, 1984), 49–63.
 - 2 Frances Stewart, *Technology and Underdevelopment* (Boulder, Colorado: Westview Press, 1977).
 - 3 E. F. Schumacher was early to make this observation in *Small Is Beautiful: Economics as if People Mattered* (New York: Harper & Row, 1973). A generation of scholars and practitioners followed.

technology became a strong social movement in both developed and developing countries, with proponents working on projects ranging from shelter to transport, from agriculture to energy. Nevertheless, despite its early successes and widespread recognition, the appropriate technology movement never cemented its place within Western design scholarship.⁴

However, several related alternative design communities arose to take the place of the appropriate technology movement in Western design scholarship: universal design, participatory design, ecological design, feminist design, and socially responsible design have gained various degrees of legitimacy in their efforts to design for marginalized groups. This paper seeks to extend alternative design scholarship by highlighting important themes in that work from the perspective of social theory. I introduce five themes important for analyzing social power in design, using a different body of alternative design scholarship to illustrate each theme. The paper is not a survey of these literature groups.⁵ Rather, I identify some of the important conceptual considerations within the literatures in order to highlight key themes in alternative design, namely: diversity, disagreement, uncertainty, governing mentalities, and agency. I conclude by reflecting on how the themes discussed can contribute to a working theory of *appropriate design*. Such a theory would encourage more attention to unequal power relations embodied in design by helping designers understand the many ways social power operates through design thinking and practice.

Accounting for Diversity / Universal Design

Designing for marginalized social groups requires paying attention to the deceptively complex fact that different people have different needs. At a certain level, this fact is obvious to every designer, of course, because imagining needs is fundamental to design, and the needs that designers target frequently are not the ones they experience themselves. Yet beyond the commonplace recognition lies a more complicated problem of effectively accounting for difference. Merely knowing that different needs exist is not the same as knowing what those differences imply. Universal design scholarship illustrates this point by directing our attention to a persistent narrowness in the way designers imagine users' abilities.

Universal design advocates have a simple but important goal: to account for a more diverse range of abilities when designing built environments. Although rooted in the accessibility movement—the advocacy and legal efforts by the disability community in the sixties and seventies to make existing public places physically accessible to people with disabilities—universal design theorists distinguish their work from accessibility design.⁶ While the accessibility movement resulted in significant architectural changes in many countries, including ramps, lifts, and larger toilet stalls, universal design theorists push the concept beyond wheelchair access. “[T]he discourse

4 Why this was so is a question asked by many appropriate technology scholars. In part, there was the waning of participation in popular social movements generally and the absorption of many appropriate technology ideas into mainstream consumer culture. Perhaps more important, however, was the failure of the movement to develop a strong, coherent voice within academic communities. See Kelvin Willoughby, *Technology Choice: A Critique of the Appropriate Technology Movement* (Boulder, Colorado: Westview Press, 1990).

5 Hence, I make no effort to account for all the important work in each body of alternative design literature or to review all the main ideas in those works I do cite.

6 Polly Welch, ed., *Strategies for Teaching Universal Design* (Boston: Adaptive Environments, 1995), 1.

on universal design assumes that it is possible to design objects and spaces such that they are usable (and will be used) by a broad range of the population, including but not limited to people with disabilities.”⁷ Universal design theorists want designers to think systematically about “inclusion” and to broaden their notion of who users are. In addition to the disabled, other groups typically *marginalized by design* include women, the aged, the infirm, and the young. Dominant design practices that for decades centered on 40-year-old, able-bodied males have ignored the needs of these groups and systematically but unnecessarily impeded their mobility and access. Universal design insights have been influential in challenging this narrow approach.

In addition to adopting a more inclusive notion of “users,” universal design scholarship encourages designers to broaden their notions of “use.” Universal design theorists argue that inclusion applies not only to access, but also to psychosocial aspects of people’s interactions with the built world. Early accessibility designers identified the physical abilities/needs of people bound to wheelchairs and walkers, but they failed to account for their psychological needs. Buildings with backdoor entry ramps, for example, may provide access for those in wheelchairs, but they additionally marginalize wheelchair users by separating them from “normal” people who enter through the front. “The principles of universal design are important... in seeking to restore disabled people’s self-esteem, dignity, and independence.”⁸

Universal design scholarship contributes to analyses of social power in design by identifying entire groups of people whose needs systematically go unmet, and by advocating that the design community begin taking them into account.⁹ Universal design scholars have gone further to consider the more complicated question of what “design for others” implies, and the conceptual shift it demands: if designers are to account for diverse users with diverse needs and abilities, they must rethink limited notions of access and independence. Designing for diversity is a crucial contribution and one that should be extended. However, designing for diversity also underscores the importance of accounting for numerous complex design factors. Claims such as, “Universal design is the idea that everyone should have access to everything all of the time”¹⁰ are conceptually problematic, because they imply that trade-offs and compromises need not be made. Working towards greater inclusiveness is not the same as assuming that everyone’s needs can be met with any one system.¹¹ Trade-offs are always required, and redirecting design towards the needs of those marginalized by specific physical conditions means other priorities go unmet. The implication that such trade-offs are not necessary—that singular systems can account for all needs—risks depoliticizing inherently political design questions about whose interests should be accounted for and how. In the case of universal design, depoliticizing the project ends up glossing over

7 Bettye Rose Connell and Jon A. Sanford, “Research Implications of Universal Design” in Edward Steinfeld and G. Scott Danford, eds., *Enabling Environments: Measuring the Impact of Environment on Disability and Rehabilitation* (New York: Kluwer Academic, 1999), 35–57. Quote, 49.

8 Rob Imrie and Peter Hall, *Inclusive Design: Designing and Developing Inclusive Environments* (London: Spon Press, 2001), 16.

9 Additionally, a body of technically oriented work in universal design identifies opportunities for and constraints to the implementation of universal design principles and projects. While a crucial contribution to universal design scholarship, I do not review it here.

10 George A. Covington and Bruce Hannah, *Access by Design* (New York: Van Nostrand Reinhold, 1997), 14.

11 The very language of “universal” design is conceptually problematic for this reason, however the term has become widely used enough that it serves more as a marker for a body of work than a descriptor.

much of the painstaking political work done by accessibility movement activists in the 1960s and 1970s. Many universal design scholars recognize this risk, and accept the challenge of steering around it. They recognize that diversity gives rise to the need for a dynamic assessment of needs, involving trade-offs at every level. Thus, universal design scholarship teaches the importance of embracing ever-greater diversity in design, while being wary of assessments that we can ever arrive at a truly “universal” design.

Coping with Disagreement / Participatory Design

As the universal designers imply through their critiques of differential access to the built world, artifacts embody certain types of power relations.¹² Workplace technologies, for example, can be designed to deskill workers and centralize power in management, or they can be designed to empower workers by capitalizing on their skills (or they can do something in between).¹³ Without direct intervention to the contrary, existing power relations usually, but not always, are reinforced by design decision making. When designers choose to counter existing power imbalances, they can work directly on projects representing the interests of marginalized perspectives, as do universal designers, or they can work to mediate conflicts between different perspectives by providing space within mainstream design processes for marginalized groups to voice their concerns. In the latter sense, design is a tool for arbitrating disagreement over which objectives to pursue. Such disagreement may arise merely from different perspectives on a problem or from enduring conflicts of interest.

Participatory design scholars have taken on the challenge of mediating disagreement over desired design objectives. With roots in labor politics, early participatory design scholars saw an opportunity in workplace technology design to empower workers in ways that do not run directly counter to the authority of management.¹⁴ Participatory design theorists engage differential power relations explicitly and directly through recognition of the structural inequalities between workers and management. Participatory designers argue that if designers accounted for workers’ perspectives in their design processes—instead of allying wholly and systematically with management—they would arrive at fairer, more satisfying, even more effective design outcomes.¹⁵ Building on these roots, participatory design has developed into a well-articulated, well-justified methodology for user participation in design processes, so that “people destined to use the system play a critical role in designing it.”¹⁶ While “[i]maged users, model users, or surrogate users ... stand in for those who will actually work with the technology” in dominant design practices, participatory design has a “central and abiding concern for direct and continuous interaction with those who are the ultimate arbiters of system adequacy; namely, those who will use the technology in their everyday lives and work.”¹⁷ As a scholarly force, participatory design has grown stronger and more diverse

12 For a detailed consideration of the potential of artifacts to embody politics, see Langdon Winner, *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (Chicago: University of Chicago Press, 1986).

13 See Todd Cherkasky, this volume.

14 Participatory design has political roots both in the U.S. labor movement and in Scandinavian codetermination laws, which require worker participation in workplace decision making (a prerogative retained exclusively by management in most settings in most countries). As with universal design’s roots in the accessibility movement, we see here again the importance of broad contextual factors in shaping particular design agendas.

15 Joan Greenbaum and Morten Kyng, eds., *Design at Work: Cooperative Design of Computer Systems* (Hillsdale, New Jersey: L. Erlbaum Associates, 1991).

16 Douglas Schuler and Aki Namioka, eds., *Participatory Design: Principles and Practices* (Hillsdale, New Jersey: L. Erlbaum Associates, 1993), xi.

17 Lucy Suchman, *Plans and Situated Actions: The Problem of Human-Machine Communication* (Cambridge: Cambridge University Press, 1987), vii.

over the decades. With a background in workplace information technologies, participatory design methodologies and motivations have been extended to architecture, product design, and beyond.

From its inception, participatory design scholarship has sought to cope with differences of perspective and goals in an explicit, productive, and fair way. Instead of ignoring the fact that conflicting interests underlie many important design decisions, participatory designers attempt to leverage such differences to arrive at outcomes suitable to diverse interests. Participatory design scholars call attention to underlying inequalities, and provide two core reasons for working against them: participatory decision making is (1) fairer and (2) more intelligent than nonparticipatory processes. Participatory design is fairer because “[p]eople who are affected by a decision or event should have an opportunity to influence it.”¹⁸ Participatory design is more intelligent because broad participation by multiple interests is more likely to result in innovative, widely agreeable solutions to shared problems.¹⁹

Increasingly, however, participatory design methodologies are used to advance the goals of user-centered design without emphasizing the inclusion of marginalized perspectives in design processes.²⁰ User-centered design is fine as far as it goes, but, in my view, it should be distinguished from participatory design. Turning designers’ attention away from marginalized groups forfeits participatory design theory’s greatest contribution: its simultaneous focus on intelligent and fair design decision making. When participatory design is employed narrowly as a tool for improving consumer products—however valuable in that effort—it ignores the more difficult problem of mediating conflicting interests. Reducing participatory design in this way becomes another barrier to focusing attention on questions of fairness surrounding design processes and outcomes. When participatory design focuses the design process on mediating conflicting interests, instead of merely including different perspectives, it offers a solid strategy for coping with disagreement in design decision making.

Coping with Uncertainty / Ecological Design

Beyond appreciating diversity in design and the need for coping with disagreements over desired ends lies a more fundamental difficulty: considerable uncertainty exists when attempting to understand or represent any complicated social-technical problem or design its solution. The designed world is a sometimes explicitly, sometimes implicitly negotiated outcome of complex interactions among institutions, expertise, interests, and environments. Uncertainties arise out of complexities inherent in design problems/solutions, limitations in human analytic capacities, and sheer randomness. No matter how improved, conceptual models used by designers will never result in fully controlled outcomes. To be sure, better design often demands better analyses, but it simultaneously demands recognition of *the*

18 Schuler and Namioka, *Participatory Design*, xii.

19 For a concise introduction to the “potential intelligence” of democratic decision making, see Charles E. Lindblom and Edward J. Woodhouse, *The Policy-Making Process* (Englewood Cliffs, New Jersey: Prentice Hall, 1993), 23–32. While they focus on decision making in the policy arena, their insights apply equally well to design.

20 User-centered design is a “[design] philosophy based on the needs and interests of users, with an emphasis on making products usable and understandable.” Donald A. Norman, *The Design of Everyday Things* (New York: Doubleday, 1988), 188. Norman distinguishes market-centered “objects of desire” from user-centered “objects of use,” but he still focuses on improving current design (better meeting existing user needs) with limited concern for questions of fairness (who are and are not users and why).

limits of analysis. Since uncertainty can never be completely eliminated, designers need productive strategies aimed at coping with it. In this way, designers can appreciate the complexities inherent in their work without becoming paralyzed by them.

Ecological—or “green”—design provides an excellent opportunity to examine the role of complexity in design. Most centrally, ecological design scholarship engages complexity by avoiding “command and control” design approaches: those presuming mastery of natural systems is both possible and desirable. Ecological designers recognize the complexity of natural systems and the limits of dominant design models for understanding them. Command-and-control design and brute-force engineering attempt to surmount environmental forces rather than working with them. By over-engineering, for instance, many designers design for worst-case scenarios, such as devising entire building air-conditioning systems so that occupants will not notice the outside temperature even on the hottest day of the year. “Deep [ecological] designers begin with a more inspired assumption: that designs can be made reasonably fail-safe if they incorporate diversity, flexibility, and biological compatibility.”²¹ Designing “with nature” is one strategy for coping with uncertainties by designing human systems to work in conjunction with natural systems.²² John Todd’s “living machines” is a frequently cited example, in which natural organisms are used to process wastewater in a progressively linked series of human-designed but self-managing micro-ecosystems.²³

As with universal design, however, it is important for ecological design scholars not to confuse progress with solutions. Respect for complexity should open up, rather than close down, a range of critical questions involving design trade-offs, coping with uncertainties, and the limitations of current analytical approaches. Our design models should ask questions of ecological complexity—such as nonlinear effects over time, cross-scale interactions, and the sheer randomness of outcomes—even if such questions are unanswerable. A disturbing trend in ecological design writing disregards these enduring complexities by intoning that the new “sustainable” design approach provides humanity the long-sought solution to problems of ecological imbalance resulting from human activity. While most ecological design scholarship does not refute the existence of enduring social and ecological uncertainties, a careful observer might question the extent to which it acknowledges them. Thus, there is a disjunction between appreciation for the complexity of natural systems on the one hand, and overlooking the extent to which ecological uncertainty remains on the other. When green designers pay careful attention to the role of complexity and uncertainty in their own models, then the “humans in harmony with nature” rhetoric does not become a sappy substitute for the difficult, critical conceptual work necessary to achieve durable progress on environmental fronts.

21 David Wann, *Deep Design: Pathways to a Livable Future* (Washington, DC: Island Press, 1995), 187.

22 Sim Van der Ryn and Stuart Cowan, *Ecological Design* (Washington, DC: Island Press, 1996).

23 See the chapter on Todd’s work in Steve Lerner, *Eco-Pioneers: Practical Visionaries Solving Today’s Environmental Problems* (Cambridge, MA: The MIT Press, 1997).

In their search for a shared language, for instance, some ecological design scholarship uses consensus rhetoric that glosses over uncertainties and dilutes difficult questions. The concept of sustainability is a case in point. Everyone supports sustainability; everyone wants to work toward it; and many theorists assume that what sustainability means is self-evident. But because sustainability is so ubiquitous, it is not clear what “it” is anymore. In the rush to implement the next sustainability initiative or to “green-wash” corporate images, critical questions of environmental and economic trade-offs go unasked. Consensus rhetoric masks uncertainties over desirable courses of action and the disagreements that exist. Any approach to ecological design (or environmental theory in general) that *assumes* consensus ultimately ends up undermining the goal of inclusiveness by ignoring the forces that divide, undermine, and separate people or populations in different contexts.²⁴ Progressive social forces in the environmental movement, in design, and elsewhere would do better to *assume difference* and then work towards consensus in order to create, rather than impose, a shared language. To the extent that ecological design models actively design for non-totally and respect for complexity—ecological and social alike—they serve as exemplars for alternative design thinking.²⁵ To the extent that they dilute complexity and fail to remind others of the limits of analysis in overcoming uncertainty, they sustain the very forces they seek to eliminate, including command-and-control mentalities, subjugation of nature, and human arrogance.

Understanding Governing Mentalities / Feminist Design

In order to transform entrenched patterns of social understanding and social-material interaction, alternative design needs an understanding of the interlinked, overlapping forces that make status quo relations so durable. *Governing mentalities*—those widely shared values, norms, expectations, and assumptions of how the world operates—are simultaneously the most important and the most difficult to identify: they are pervasive, subtle, distributed patterns of thought that underpin social activity and personal interpretations.²⁶ Governing mentalities shape how people interpret macro social-cultural phenomena and how they think about their own lives and identities. Coming to terms with the analytic and practical tensions associated with the persistence of such forces is a serious challenge to design thinking. Feminist design scholarship emphasizes the importance of this challenge by showing how governing mentalities impinge on design practice to systematically shape outcomes.

Simply put, feminist design considers the relationship between the built world and the position of women in society.²⁷ Feminist design theorists criticize dominant design practice for mirroring and thus reinforcing broader sexist cultural forces. They show how gendered power relations become embedded in material objects, and then how social-material relations reinforce and

24 This is especially true when thinking of the tensions between ecological design theory and meeting the needs of the poor. The class bias of mainstream environmentalism has been pointed out by many scholars and environmental justice activists. See, for example, Kim Fortun, *Advocacy after Bhopal: Environmentalism, Disaster, New Global Orders* (Chicago: University of Chicago Press, 2001).

25 See Kim Fortun, this volume.

26 Campbell introduces the concept of “governing mentalities” in her analysis of the discourse surrounding U.S. drug policies. Nancy Campbell, *Using Women: Gender, Drug Policy, and Social Justice* (New York: Routledge, 2000).

27 Note, however, that there is an important and long-standing tradition within feminist theory claiming that all processes of marginalization, not only the marginalization of women, are the subject of feminist analyses.

legitimate sexist practice. For example, in their study of microwave cooking and the design, making, and marketing of microwave ovens, Cockburn and Ormrod show how different assumptions about the skills associated with cooking, and about who exercises those skills, influenced designers' assessments of what the microwave oven is actually intended to achieve. Is it to "zap" food—requiring no skill and minimum intervention—as understood by the primarily male design engineers? Or is it to "cook" food—requiring both skill and regular intervention—as understood by the female home economists that pilot-tested the ovens? Such gendered differences in expectations of the artifact arise out of deeply embedded social roles of men and women around cooking. The design of microwave ovens ends up embodying certain of these expectations, and, by so doing, reinforces them. "Technology is gendered. We collectively gender it, of course; but, in turn, it individually genders us."²⁸

Unfortunately, in the face of governing mentalities, the alternative to gendered artifacts is not straightforward. Positing "feminist artifacts" is conceptually problematic if not misleading, because artifacts by themselves are neither neutral nor determinative.²⁹ Discussing alternative housing experimentation, for instance, Wajcman argues, "The failure of this experiment in architectural solutions to the problems of women's domestic oppression... demonstrates that new, egalitarian architectural forms cannot simply be superimposed on a preexisting social order and be transformative in themselves."³⁰ Rather than advocating the design of feminist artifacts, most feminist design theorists seek to counter sexist material practices by breaking down social hierarchies that underlie social power inequalities and lead to marginalization in the first place.³¹ Dismantling hierarchy through design requires a sophisticated and direct appreciation for the governing mentalities leading to marginalization, including naturalized definitions of "women," how design expertise is legitimated, and how design priorities are determined.³² Extending Wajcman's line of argument, Weisman notes that, while urgently needed, feminist-inspired housing alternatives are no "solution" to women's marginalization.

In the long run, they will not gain women their equality or change men's relationship to domestic life, for they largely ignore the underlying values that created the problems in the first place. Genuinely satisfying alternatives to conventional housing and communities will emerge only as we are able to visualize scenarios of the future based on the reconceptualization of work, family life, and gender roles.³³

According to most feminist scholars, dismantling hierarchy requires understanding the governing mentalities that structure current conceptualizations of social relations. No domain of social life, or of design, is or can be isolated from the influence of gender-based values and assumptions. Reiterating the importance of challenging

28 Cynthia Cockburn and Susan Ormrod, *Gender and Technology in the Making* (London: SAGE, 1993), 159.

29 For greater detail on this point, see Woodhouse and Patton's introductory article in this volume.

30 Judy Wajcman, *Feminism Confronts Technology* (University Park, PA: Pennsylvania State University Press, 1991), 125–126.

31 Amplifying women's voices in design is one way to break down sexist hierarchies. To this end, feminist designers have (1) brought to light the historical contributions women have long made to design, (2) redirected design to women's experienced needs, and (3) designed in ways that allow women to create new, alternative, empowered lifestyles. See Rothschild and Rosner's review essay in Joan Rothschild, ed., *Design and Feminism: Re-visioning Space, Places, and Everyday Things* (New Brunswick, NJ: Rutgers University Press, 1999).

32 Of course, there are diverse interpretations of what such terms as "woman" and "expertise" mean, but these interpretations are built on the very same governing mentalities feminist designers seek to question.

33 Leslie Kanes Weisman, *Discrimination by Design: A Feminist Critique of the Man-made Environment* (Urbana: University of Illinois Press, 1992), 163.

the basic assumptions we live by, Rothschild identifies feminist designers' shared aim "to generate and put into practice projects that work, and so not only change that practice but also transform its supporting concepts and rationale."³⁴ Thus, addressing marginalization through design requires changes not only to immediate design practices, but also to the governing mentalities that underlie those practices.

Thinking Through Agency / Socially Responsible Design

In addition to the governing mentalities that situate how designers understand their work are macro-level, political-economic forces structuring design practice, especially the market. The market provides strong incentives for designers to participate in economic systems that are arguably beyond any individual's ability to comprehend, no less confront. Yet, consideration of structural forces such as the market is important because it brings into high relief the multifaceted, interconnected constraints to agency for designers who seek to challenge the status quo. "Agency" refers here to the ability of social actors to act independently of larger structural forces. In the context of alternative design, agency refers to designers' ability to work in ways that confront dominant design outcomes and empower marginalized social groups. By squarely addressing constraints to designer agency, especially those deriving from market structures, alternative design scholars are better positioned to identify opportunities for genuinely alternative practice.

Critiques of consumerist design are one way design scholarship has accounted for market forces constraining designer agency. Scholars who seek to counter consumerist design argue that existing market forces focus design resources to an indefensible extent on creating products aimed at satisfying the spurious desires of a narrow group of people.³⁵ They argue that consumerist market structures provide lucrative incentives for designing the ephemeral, the gimmicky, and the superfluous. By catering to economically powerful groups, market-led design practices create ever more products while leaving many basic human needs unaddressed. According to Whiteley, market structures, together with their consumerist design ideologies, are particularly problematic when they reinforce individualism (not individuality) and work against the possibility of a *social* vision in design.³⁶ He argues that structural incentives of short-term profitability focus consumer-led design on the (individualized) desires of economically powerful social groups leading to "private affluence" within a broader context of "public squalor."³⁷ The most apparent instance of this trend is how market incentives for designers overwhelmingly reward consumerist practice in the North, despite the fact that there is a clear (non-market) demand for thoughtful, experienced design in the South. This void is magnified when designers in poor countries are pulled away from their homelands by lucrative salaries in affluent economies. While by no means

34 Rothschild, *Design and Feminism*, 181.

35 Edward J. Woodhouse, "Curbing Overconsumption: Challenge for Ethically Responsible Engineering," *IEEE Technology and Society Magazine* (Fall 2001): 23–30.

36 Consumerist design ideologies are situated in and reinforce structural market forces, so there is a reciprocal relationship between the two. Whiteley argues that designers' very sense of "good design" is tied to consumerism and its emphasis on highly refined aesthetics above all else. Nigel Whiteley, *Design For Society* (London: Reaktion Books, 1993).

37 This claim holds true within nations/markets, but it is especially evident when considering global inequalities.

exclusive to designers, this problem is pervasive within design professions, and significantly shapes what gets designed and how.

Given the pervasiveness of consumerist market structures shaping design, can we reasonably hope for alternative practice that results in anything more than trivial resistance? At issue is the question of how much latitude individual designers have in challenging dominant market and other macro-level structures. Papanek addresses this theme when he argues that designers usually have sufficient latitude to overcome dominant market incentives, at least in their own practice. He says, "The designer often has greater control over his work than he believes he does, that quality, new concepts, and an understanding of the limits of mass production could mean designing for the majority of the world's people" rather than for the few.³⁸ Papanek calls on designers to take responsibility themselves for moving beyond narrow market considerations, and to design products genuinely needed by humanity.

The designer's responsibility must go far beyond [market-place] considerations. His social and moral judgment must be brought into play long before he begins to design, since he has to make a judgment, an a priori judgment at that, as to whether the products he is asked to design or redesign merit his attention at all.³⁹

In a similar vein, and building upon Papanek's work, Whiteley discusses various faces of alternative design and the many contradictions in its practice. With regard to the agency of designers, Whiteley explicitly addresses the tension between designing within a corrupted market system on the one hand, and doing the gritty political work to change that system on the other. In a section entitled "'Socially Useful' Design *within* the System," Whiteley identifies a shifting middle ground, but arrives at no clear assessment of where the boundaries of designer agency are.⁴⁰ Margolin and Margolin recently renewed the call for a more socially responsible design, using social work as an alternative framework because of its "principle objective... to meet the needs of underserved or marginalized populations."⁴¹ Margolin and Margolin suggest that casting the "market model" and the "social model" as binary opposites "limits the options for a social designer."⁴² Instead, they advocate that designers consider collaborating with allied professionals—such as social workers, health workers, and educators—around socially relevant projects, thereby working within established institutional frameworks that are somewhat insulated from market priorities.

Socially responsible design scholars identify some of the most important structural conditions that challenge socially responsible design practice, and they direct our attention to the need for considering designer agency as a key analytic variable. However, considerable work remains to be done for a systematic analysis of the opportunities for and constraints to designer agency. One facet

38 Victor Papanek, *Design for the Real World: Human Ecology and Social Change*, 2nd edition (Chicago: Academy Chicago Publishers, 1984), 234.

39 *Ibid.*, 55.

40 Whiteley, *Design For Society*, 115–118, my italics. This limitation is less a criticism of Whiteley's ambitious, thorough, and sober analysis than a recognition of the difficulty of the task.

41 Victor Margolin and Sylvia Margolin, "A 'Social Model' of Design: Issues of Practice and Research," *Design Issues* 18: 4 (Autumn 2002): 24–30.

42 *Ibid.*, 27.

of that analysis is thinking about design interventions that overcome deeply entrenched structural conditions without relying on heroic acts of self-sacrifice by individual designers. Another facet is exploring the relationship between designers as employees, as professionals, and as citizens in order to more tightly couple daily design practices with the necessary political work identified by Whiteley. By more thoroughly mapping out the terrain of designer agency, design scholarship can assist individual designers to find opportunities within their work to confront structural forces, such as the market, that inordinately shape design outcomes.

Synthesizing Design Alternatives / Toward *Appropriate Design*

This paper has used alternative design literatures to draw out several important themes for thinking about how social power operates in design. While I have relied on one body of literature to develop each theme, all of the literatures, in one way or another, deal with all the themes identified. Building on insights from social theory, I have highlighted both strengths and weaknesses in the current work. But my ultimate goal has been to extend alternative design scholarship by considering what a conceptually robust, integrative alternative design framework would require. Borrowing from the inspiration of the early appropriate technology movement, I use the term *appropriate design* to encompass the best of alternative design scholarship, specifically with regard to thinking about how social power operates in design, and how it should operate to more adequately address the needs of marginalized social groups. To that end, I propose the following four elements of appropriate design:

Appropriate design accounts for diversity and disagreement. Designers should account for as much diversity as possible when conceptualizing users, but they also should recognize that some interests conflict and that trade-offs must be made. Assuming there will be disagreement about desired ends, and then squarely addressing the disagreements, is more likely to empower users than is avoiding potentially contentious areas.

Appropriate design accepts and copes with uncertainty. Designers should avoid command-and-control approaches. While striving for greater robustness in design is a worthy goal, designers should be wary of claims to comprehensiveness. Rather, by anticipating uncertainties and then systematically preparing to cope with them, designers will be better prepared when nasty surprises surface.

Appropriate design recognizes the importance of governing mentalities. Designers should understand that the forces shaping dominant design norms run deep. The governing mentalities that shape what is "good," "right," and "true" are the most difficult to identify and the most important to challenge. While governing mentalities cannot be rejected outright, they can and should be continuously challenged in design practice.

Appropriate design theorizes agency-structure tensions. Design practices are constrained both by design ideologies and by macro-structural conditions, especially market forces. Within constrained spaces, however, lie opportunities for creative acts. Designers should recognize both the extent and the limitations of these constraints: some constraints can be avoided; others can be turned into productive stimuli. The trajectory of design careers, like that of designed artifacts, is neither fully free nor predetermined.

The barriers to social change through design are dispersed, pervasive, and resilient. They overlap and interact to “over-determine” the status quo. They work at the level of dominant design models, dominant social assumptions, dominant economic incentives, and even dominant political structures. Because status-quo forces are so difficult to counter, highlighting them often leaves designers feeling paralyzed rather than directed to act. This dilemma brings to light the dual character of incrementalistic approaches to social change: in the face of status quo-preserving forces, incremental change is simultaneously insufficient and imperative.⁴³ Any single design effort, no matter how intensely motivated, is inadequate relative to the enormity of the problem. Incremental efforts necessarily lack the punch needed for broad social change, since existing conditions are over-constrained and barriers must be addressed simultaneously at multiple nodes. Yet designers (as with other social actors) have no avenue for change outside of specific (narrow) projects in specific (narrow) contexts. In the end, designers are faced with a double bind, which requires humility and diligence, more than anything else, to negotiate.

Appropriate design squarely acknowledges the power of status quo-preserving forces in order to pragmatically address the enormity of the task facing those who would work for social change through design practice. As advocates of social change, alternative design scholars should celebrate the progress that has been made in identifying and addressing uneven social power relations through design. Yet as social critics, we also should recognize the dangers of feeling satisfied that alternative design scholarship has found the correct path: that it has arrived. Like democracy, appropriate design is an ongoing activity that can never be fully or finally achieved.⁴⁴

43 Charles E. Lindblom, *The Science of “Muddling Through”* (New York: Irvington Publishers, 1993 [1959]).

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